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ABSTRACT

A study was designed to test the effectiveness of 21 public and 29 proprietary schools in four large metropolitan areas by following 2270 graduates from six large and fast-growing occupational programs into the labor market and assessing their success. Average proprietary instructional costs were 35 percent less than public costs: they concentrated on specific, short, intensive job training and tended to work their teachers more and to pay them less. Proprietary schools recruited and seemed to hold the less-advantaged student better. Other findings include: (1) Only 2 of 10 graduates of either kind of school who chose professional or technical-level training ever got those jobs; (2) Almost 8 of 10 graduates of either kind of school who chose lower-level clerical or service worker programs got those jobs, but most earned less than the federal minimum wage; (3) Public and proprietary school graduates had about the same occupational success, after controlling for differences in their backgrounds; (4) Female graduates always earned less than male graduates and ethnic minorities generally earned less than Whites in the same jobs; (5) Apparently because they paid twenty times more for their courses, proprietary school graduates were generally less satisfied than their public counterparts. Recommendations for improvement are made. (Author/DC)

Public and Proprietary Vocational Training:

A STUDY OF EFFECTIVENESS

by Wellford W. Wilms

CENTER FOR RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION
UNIVERSITY OF CALIFORNIA, BERKELEY
1974

CENTER FOR RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION
UNIVERSITY OF CALIFORNIA, BERKELEY

The Center for Research and Development in Higher Education is engaged in research designed to assist individuals and organizations responsible for American higher education to improve the quality, efficiency, and availability of education beyond the high school. In the pursuit of these objectives, the Center conducts studies which: 1) use the theories and methodologies of the behavioral sciences; 2) seek to discover and to disseminate new perspectives on educational issues and new solutions to educational problems; 3) seek to add substantially to the descriptive and analytical literature on colleges and universities; 4) contribute to the systematic knowledge of several of the behavioral sciences, notably psychology, sociology, economics, and political science; and 5) provide models of research and development activities for colleges and universities planning and pursuing their own programs in institutional research.

ABSTRACT OF THE STUDY

One hundred years ago, American higher education was only for the chosen few. Since then, higher education in America has been redefined as "postsecondary education," and it has developed into the most comprehensive system in the world. Like an organism, it has continually formed new programs to adapt to new needs, while holding out the promise of equal educational opportunity for all. During this evolutionary process, vocational education, traditionally education's unglamorous stepchild, has reemerged as career education in response to an influx of first-generation college students with jobs foremost on their minds. These "new students" are now enrolled at almost 1000 community college and technical school campuses, and in 10,000 proprietary (profitmaking) schools.

Very little was known about how effective these schools were at training new students for jobs and providing them a chance for upward mobility. We designed our study to test the effectiveness of public and proprietary schools by following a large sample of graduates into the labor market and assessing their success. We also tested to see if there were systematic differences in public and proprietary students' backgrounds that could have affected their experiences in the labor market.

Our study, grounded in the theory of Downs (1967), treated public and proprietary schools as conceptually distinct. Proprietary schools depend on the marketplace for their income, but public schools depend on the political process for theirs.

The study included a random sample of 21 public and 29 proprietary schools in four large metropolitan areas. We selected samples of students and graduates from six large and fast-growing occupational programs.

The National Opinion Research Center identified all 2671 graduates of the 50 schools' selected occupational programs. Through intensive tracing, NORC interviewed 85 percent or 2270 of these graduates.

We found that proprietary schools operated with fewer resources than public schools, but in most cases they targeted those resources on specific, short, intensive job training. The proprietaries paid their less-credentialed teachers 65 percent of comparable public school salaries and worked them harder. Consequently, average proprietary instructional costs were 35 percent less than public costs.

We found that the proprietary schools recruited and seemed to hold the less-advantaged student better than the public. Generally, the proprietary student was more likely from an ethnic minority group, with lower educational status and poorer verbal skills than his public counterpart. We found no difference in the achievement motive between public and proprietary students at graduation. The highest socioeconomic status students from both public and proprietary schools disappeared between first enrolling and graduation. We speculate that these students either left early for jobs or transferred to four-year schools. A final stage of this study, supported by the National Institute of Education, will test this and other hypotheses.

When we followed up the 2270 graduates we found:

- Only two out of ten graduates from both public and proprietary schools who chose professional or technical-level training ever got those jobs. The rest became clerks or took low-paying, unrelated jobs.

- Almost eight out of ten public and proprietary graduates from lower-level clerical or service worker programs got those jobs but, with the exception of secretaries, barely earned the federal minimum wage.

- Public and proprietary graduates had about the same occupational success, after controlling for differences in their backgrounds.

- No relationship between public schools' characteristics and success of their graduates.

- Limited associations between proprietary schools' characteristics and their graduates' later success. Graduates who earned the most generally went to proprietary schools that were moderately large with higher-paid teachers who spent fewer hours in class.

- Neither kind of school compensated for less-advantaged students' backgrounds. Women always earned less than men, and in all but one case ethnic minorities earned less than Whites in the same jobs.

- Proprietary graduates were generally less satisfied with their training than their public counterparts, apparently because proprietary graduates paid 20 times more for their courses.

We conclude this latest evolution in postsecondary education that has recently been extended to the least-advantaged population in the system maintains class and income inequalities rather than overcomes them. In the final chapter, we offer seven preliminary recommendations for making these schools more effective institutions for a democratic society.

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Finally, thanks to Harry Summerfield of the Wright Institute for working through the broader interpretation and implications of the findings with me.

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PART I

INTRODUCTION

The large new clientele for postsecondary education goes by many names--"culturally disadvantaged," "deprived," "high risk," "nontraditional," "emerging," "culturally different," and "underprepared" (Klingelhofer, 1973). Cross (1971) termed them "new students"--students who are new to postsecondary education. Typically, the "new student" is a first-generation college student whose blue-collar father completed only high school. Over half of the "new students" are women. Although ethnic minorities are overrepresented, Whites are still in the majority.

Many "new students" have already failed in school, and they generally lack interest in cognitive school work. Most see hard work as a virtue and want to prepare for a job or career.

Although actual enrollments in postsecondary schools have not met the optimistic forecasts made in the early 1970s, the proportion of "new students" going to college has increased dramatically and the occupational orientation of these students has kindled a new interest in vocational education.

From another quarter, demands for increased productivity to stave off inflation are also focusing awareness on vocational training. Prophetically, Peter Drucker argued for increased economic productivity almost five years ago in his article, The Surprising Seventies (1970). Drucker concluded that the influx of young people into the labor market would increase competition for jobs and new jobs would have to be created. The capital to create and maintain these jobs, Drucker suggested, would have to come from increased productivity, which in turn would depend on effective occupational training.

The U. S. Office of Education recently launched an all-out promotion of "Career Education"--an updated name for education's former stepchild--to meet the perceived needs of "new students." This massive infusion of federal dollars helped speed the career education concept on its way to the states, where many educators

adopted it as a panacea for all education's ills The concept has now grown to cosmic proportions. Even kindergartners are learning about the world of work.

The institutions charged with providing most career training at the postsecondary level are community colleges and technical schools in the public sector and proprietary schools in the private sector.

Tax-supported public schools enrolled over 1,000,000 students by 1972 (National Planning Association, 1972). The Carnegie Commission in The Open Door Colleges (1971) recommended expanding the occupational education at the community college level and making it respond to changing demands of the labor market. The Commission also noted that occupational programs in community colleges were drawing a larger proportion of students--from slightly over a quarter of total community colleges' enrollments in the '60s to perhaps over a third or more in the early '70s. Yet we know virtually nothing about how well these schools prepare people for productive jobs.

We do not know much about the effectiveness of proprietaries (privately owned profitmaking schools) either, but they are big business. They enroll over three million students each year, producing gross annual revenues of at least 2.5 billion dollars (Eisenberg, 1973) on which substantial corporate, property, and personal income taxes are paid. Cosmetology or "beauty" schools represent a third of the total number; trade and technical schools, another third; and the business plus the correspondence schools, the final third. Although the correspondence schools represent less than a tenth of the proprietaries, they enroll two-thirds of the students and produce over half of the industry's income.

Despite their large numbers, proprietaries weren't "discovered" by educational policymakers until a few years ago. They are not new--proprietary vocational training began in Plymouth Colony in 1635. One plausible explantion for the current interest in them is that in the early days, proprietary schools were conducted as businesses and staffed by business persons whose interests centered on student recruitment and the bottom line of the income statement rather than on academics and scholarly writing. Their interests and style probably eluded most traditional educators and offended the rest.

Academic and business interests have merged in the past decade, with each nearly reversing its former direction. As academic education encountered rough fiscal sailing, it adopted many practices and hired personnel from the business sector. It paid increasing attention to recruiting students, hoping for an excess of income over expenditures. On the other hand, many proprietary schools have made a bid for respectability, to attract more students and federal student aid funds. In doing so, they have become concerned about accreditation, transfer

of credit, and degree granting status--issues that lay outside the [illegible] of profitmaking schools [illegible] years ago.

[illegible] of interests [illegible] into outright competition [illegible] student market and [illegible] information [illegible] needed [illegible] policymakers [illegible] not much is available.

What we know of proprietary vocational schools is fragmentary [illegible] Miller and Hamilton [illegible], [illegible] of the [illegible] for Business Schools, contributed little [illegible] data [illegible]. The Independent Business School in [illegible] overview [illegible] how these schools sur[illegible]

Classrooms on Main Street by Clark and Sloan (1966) suggests [illegible] proprietary vocational schools in their endless variety. [illegible] discuss the broad outlines of [illegible] private controls.

[illegible] Belitsky [illegible] an exploratory study (1966) for the [illegible] but the first definitive study of pro[illegible] and their students was undertaken by [illegible] 127 trade and technical proprietary [illegible] National Association of Trade and Technical [illegible] concluded that proprietary [illegible] in satisfactory [illegible] and that [illegible] warranted expansion.

[illegible] Research Foundation's final [illegible] training information systems which [illegible] training status:

[illegible] vocational schools, in the [illegible] tend to be placed in [illegible] significantly higher starting [illegible]

[illegible] matched groups of [illegible] to test the [illegible] significantly favored the [illegible] only [illegible], because [illegible] mailed question[illegible]

[illegible]

proprietary and nonproprietary programs were about equally effective except in the computer field, where the nonproprietary graduates fared better. However, the study had methodological shortcomings which may account for these findings. For example, private non-profit schools were [illegible] the proprietary sample was heavily weighted toward the computer field, which has gone from a starved to an oversupplied field in the past eight years; occupations were lumped into groupings which made specific comparisons impossible; graduates were asked only if their current jobs were related to their training; the questionnaire did not ask for an actual description or title of the job; and no attempts were made to control for differences between students' backgrounds and abilities.

The Inner City Fund Study (1972), recently completed for HEW, describes the behavior of faculty, administrators, and students in a small sample (17) of proprietary vocational schools. This descriptive study maintains the profit motive is responsible for a clarity of mission, better teaching, and more institutional flexibility in meeting the changing demands of the labor market.

Wolfi and Nelson (1974) inventoried the public and private (proprietary and nonprofit) schools in Massachusetts, mapped the degree of overlapping programs, and raised policy questions of state and federal support and regulation.

The Boston Globe and Washington Post both recently concluded extensive exposés of proprietary schools that pinpointed a number of illegal and unethical practices. The conclusions implied that proprietary schools were inherently rip-offs, but those conclusions stemmed more from the reporters' own assumptions than the data. For example, the reporters assumed that "inadequate" facilities were substandard by definition. They assumed that a school's hiring a businessman rather than an educator as director was somehow a harsh indictment of a school's quality. Their reporting on flagrant abuses of the public trust was a valuable service, but zeal carried them beyond the limits of reliable data.

Most states' postsecondary commissions or education departments are grappling with including the proprietary schools in the postsecondary system, but they can find little guidance from research because of the paucity of analyses. The Federal Trade Commission and the proprietary school industry, which are gearing up for hearings on a new trade rule to regulate profitmaking schools more tightly, need research on the effectiveness of these and public schools to help them make intelligent decisions or minimize bad ones.

But, no studies that have tried to draw conclusions about the effectiveness of proprietary and public vocational training have assessed or controlled for preexisting differences in students' backgrounds. This study has.

Chapter 2

CONCEPTUAL FRAMEWORK AND DESIGN OF THE STUDY

1. Conceptual Framework

Proprietary and public postsecondary schools are conceptually distinct. Privately-owned proprietary schools are rooted in the marketplace. If they make money, they survive. Public schools are governed by publicly appointed or elected boards or trustees and ultimately depend on the political process for their well-being. This essential difference determines how each type of school derives its income, allocates its resources and, most important, organizes its vocational program. In this chapter we describe some characteristics of each kind of school.

MAJOR SOURCE OF INCOME FOR PROPRIETARY SCHOOLS

A proprietary vocational school's income is related to how well its graduates do in the marketplace. Most proprietary schools must hire, retain, and promote the teachers that do the best job of training students in tasks dictated by the job market. If their students do not get satisfactory jobs, these schools quickly lose their appeal. In short, the proprietary vocational school derives its income through the market mechanism.

ALLOCATION OF RESOURCES IN PROPRIETARY SCHOOLS

The conditions of the labor market figure heavily in a proprietary school's decisions on how to allocate resources. To maximize their profits, these schools must do a better job of preparing their students for occupations than their competitors for a given cost. Proprietary institutions must always take into account signals from output markets when deciding where and how to spend time and money.

INSTITUTIONAL CHARACTERISTICS OF PROPRIETARY SCHOOLS

The proprietary vocational schools' dependent relationship on output markets means:

1. They have limited objectives and programs. They are organizations with a "single purpose": preparing students for successful employment. They neither try to be, nor want to be, all things to all people.

2. They screen out students with a high probability for successful placement, knowing their own success depends on the quality of jobs their students get. For example, Belitsky's (1969) study of trade and technical schools showed that admission to 47 percent of the vocational courses offered by the responding schools required a passing grade in an achievement or aptitude test.

3. They are flexible enough to accommodate the client (student and potential employer needs. By offering short courses, proprietary schools are recognizing that a student's foregone income is the largest single expense of training. Year-round operations and frequent class starts, which make going to school easier for the student, are the norm. In their exploratory study of 38 proprietary schools in Santa Clara County, California, Kincaid and Podesta (1966) discovered that:

> Course content and time were two of the three factors mentioned most frequently by these students in explaining their decision to enroll in a proprietary school program. . . . Students mentioned that when they had reached a decision to take a course, they could begin classes at once or at least within one or two weeks. There were no scheduling problems to cope with, and registration was a simple matter that involved only signing a contract and arranging for payment. Course content is directly related to course content [p.17].

4. They are geared to providing effective training at low cost. Both the Kincaid and Podesta study and the Belitsky study found proprietary schools frequently substituted inexpensive, yet effective, teaching methods--extensive use of work-study programs, audio-visual aids, programed instruction, and team teaching--all practices considered innovations in public schools. The market evidently encourages proprietary schools to experiment with and evaluate new methods. Belitsky (1968) gives many examples of effective teaching methods, particularly for the "disadvantaged," that grew out of proprietary schools' experiments:

> The breakdown of a course into short, sequential units or topics is perhaps the most distinctive method of instruction found in private schools. Professor Kenneth Hoyt of the University of Iowa believes that school administrators "stumbled on"

this important innovation which provides "short-term motivations" and the first success in the lives of many students [p.75].

5. They hire, retain, and promote their teachers on their demonstrated ability to teach. Instructors in proprietary vocational schools do not get tenure; students and school management evaluate them frequently--a practice, according to Belitsky, that would offend most public school instructors.

6. They emphasize job placement. Ninety-nine percent of the schools surveyed by Belitsky provided placement services for their graduates, and 80 percent provided the service for life. Belitsky also reported that 80 percent of the schools he surveyed had student follow-up procedures. At least 70 percent of the schools followed students from six months to one year after graduation.

Kincaid and Podesta (1966) corroborated these findings in their study: "The third factor that students mentioned as influencing their decision to attend a proprietary school was placement services [p 17]."

Belitsky found proprietary school instructors frequently used job placement to motivate their students. When the schools surveyed were asked to rank incentives used to maintain student interest, they most frequently said, "Visits by employers or their representatives."

MAJOR SOURCE OF INCOME FOR PUBLIC SCHOOLS

Public institutions offering vocational education closely resemble the bureau model formulated by Anthony Downs (1967). They tend to be large; they depend on full-time membership; and they hire, retain, and promote on a merit basis. They are also economically "one-faced," which is their most important characteristic for this study. While they must compete with other institutions for students and resources, their graduates are not directly evaluated in the market. Unlike private institutions, they do not depend on their performance in the marketplace for their income. It comes from a central budgeting agency, or through the political process.

ALLOCATION OF RESOURCES IN PUBLIC SCHOOLS

Public institutions do not have the direct connection to output markets that gives "two-faced" organizations signals on where to allocate resources. Lacking these signals, public schools rely on last year's budget. Wildavsky (1964) and Downs (1967) ascribe major importance to last year's budget in determining this year's budget. According to Downs:

> Last year's budget represents an investment in obtaining consensus as well as in designing a given structure. Each bureau tends to move toward an equilibrium position embodying a consensus about its actions among its members, its clientele and other agents in its power setting. It implies that the status quo is tolerable enough so that no efforts to alter it will be launched by anyone with enough power to do so [p. 249].

While this process provides the public institutions with stability (rarely will you see radical departures from last year's budget), it also means that budget or program changes will likely be conservative, and perhaps unrelated to market needs, to protect the internal order of the institution.

INSTITUTIONAL CHARACTERISTICS OF PUBLIC SCHOOLS

Because public institutions depend on the political process rather than the marketplace:

1. They have multiple objectives and roles. Community colleges act asfeeder schools for senior colleges, as valuable extensions of high schools where "late bloomers" can find themselves, and as vocational training institutions.

Many community colleges have difficulty maintaining the increasingly expensive two-year terminal vocational programs faced with built-in institutional competition from the academic higher-status college transfer programs. In his study of costs in community colleges, Morsch (1970) observed:

> The pressure to expand "liberal arts" programs (in favor of occupational programs) is almost irresistible for institutions which are seeking to grow and to demonstrate the largest educational impact on the community which is consistent with their objectives [p. 51].

However, with the renewed federal push on occupational education, this trend is beginning to reverse itself and occupational programs on many public campuses are being expanded.

2. They require more nonemployment-related course work (English, history, social studies) because state education codes, and tradition, say they should educate the "whole man" (Wilms, 1973).

3. They have open admission policies. Some evidence suggests institutions screen within themselves for courses that require higher ability (Clark, 1960).

4. They are less flexible in meeting student and employer needs because they must also fulfill institutional and governmental regulations. Courses with comparable employment objectives are longer in public schools than in proprietary schools, and begin less frequently. Few public programs operate on a year-round basis (Morsch, 1970).

5. They react more cautiously to incentives to provide training at lower cost. Available research suggests that public community colleges rarely substitute inexpensive teaching processes in their classes. In his analysis of costs in community colleges, Morsch writes:

> Teacher salaries constitute virtually all the costs (94.4 percent) of actual classroom instruction despite advances in audio-visual techniques, programmed instruction, and the like. Instructional equipment costs, frequently considered a major cost in occupational programs, is a relatively minor item in most schools' budgets, except for schools which are new or are equipping new campuses or laboratories [p.].

6. They usually hire, retain, and promote on criteria other than a teacher's ability to teach. According to Medsker and Tillery (1971), teachers in many of the public community colleges are appointed and promoted on the basis of previous teaching experience, degrees held, and tenure.

7. They place less emphasis than proprietary schools on job placement. Academic counselors far outnumber occupational counselors and, according to Kincaid and Podesta (1966):

> When the role of the vocational counselor in public schools was discussed in student interviews, they observed that the guidance was general and concerned with qualifications for employment rather than employment leads [p.17].

SUMMARY

Our view, supported by empirical evidence, provided the conceptual framework for the study. We expected to find systematic differences in proprietary and public students' backgrounds and abilities and our central hypothesis was:

After controlling for differences in students' backgrounds and abilities, graduates of proprietary schools will experience greater occupational success in the labor market than graduates of comparable public programs.

2. Design of the Study

In 1972 we designed the study to see if there were systematic differences in characteristics and occupational success of public and proprietary school students, and to see if those differences held across diverse kinds of public and proprietary schools, geographic regions, and occupations. We did not intend to generalize to all public or all proprietary schools in the country.

We designed the study to include six occupations of varying status. We defined occupational status according to the Hodge, Siegel, and Rossi prestige scores (see Siegel, 1971)--a rating system developed at NORC which asked respondents to evaluate the relative social standings of occupations. These rankings, which now cover all occupations in the 1970 Census, have held up over time and across many subgroups. The scale ranges from a high of 82 (physicians) to a low of 9 (bootblacks). Occupational prestige scores for the occupations in this study ranged from 57 (accountants) to 33 (cosmetologists). Three occupations included men and women, two occupations only women, and one occupation only men. All six occupations were significant in terms of size and were considered growth occupations by the U.S. Department of Labor. We began the study in four geographically varied metropolitan areas with enough schools and students to construct the sample. The areas were also politically and socially diverse and had differing higher education policies, industrial bases, and labor market conditions.

OCCUPATIONS SELECTED (In Order of Prestige)

1. Accountant. This occupation had the highest prestige rating, 57, of any of the six occupations selected for study. It has a projected growth rate of 43.4 percent to 1980. A half million men and women worked as accountants in 1969 (less than 20 percent hold the CPA designation) and the Department of Labor predicts that 717,000 will be needed by 1980. Accounting is a male-dominated occupation, [illegible] with a bachelor's degree [illegible]

[illegible] rate [illegible] occupation

in this study. The demand for programmers is predicted to grow 128 percent by 1980. In 1968, 175,000 men and women worked as programmers and the Department of Labor projects a need for 400,000 by 1980. A four-year college degree is also becoming more important for people looking for programming jobs.

3. Dental Assistant. Dental assistant programs are starting to appear in postsecondary schools, both public and proprietary, although, in the past, most dental assistants learned on the job. This female-dominated occupation of the allied health fields ranks 48 on the NORC prestige scale and is projected to grow 50 percent by 1980, from 100,000 to 150,000. Department of Labor Bulletin 1701 says the current need for dental assistants would not be met even if all in-school programs were doubled.

Currently, 170 dental assisting programs are accredited by the Council on Dental Education of the American Dental Association and virtually all are in the public sector. ADA requires programs to be at least one year long; however, they may loosen this requirement soon. Most proprietary programs only run from four to six months. Graduates of accredited programs can take examinations to become "Certified Dental Assistants" but dental assistants can usually find jobs without a certificate.

4. Electronic Technician. A major component of the professional and technical occupations, projected to grow 43 percent in the coming 20 years--from 620,000 to 890,000. This male-dominated occupation (11% are women) ranks 47 on the NORC prestige scale.

"Technician" refers to workers whose jobs require both knowledge and use of mathematics and science. About seven out of ten electronic technicians work in private industry, with the others employed in government.

5. Secretary. This is the largest occupation within the clerical group. Because a high school diploma is essential, many postsecondary schools as well as high schools train secretaries. Currently, 2.7 million people are employed as secretaries, and by 1980 a projected 37 percent increase should bring the total to 3.7 million. Virtually all secretaries are women and the occupation is assigned a relatively low NORC prestige score of 46.

6. Cosmetologist. More commonly known as hairdressers or beauty shop operators, 485,000 people (10% men) are employed in this occupation that ranks far down on the NORC prestige scale, at 33, largely because of the low education requirements. Most cosmetologists

work in salons operated as independent shops, often in conjunction with hotels or department stores. Employment is concentrated in urban areas, and most salons are small (fewer than four operators). While cosmetology carries a low prestige rating, it can be a path for upward mobility. Most cosmetologists begin as general operators and advance as they gain experience and build up a clientele or become skilled in special styles. Experienced operators may go into management of a salon, or buy their own business.

CITIES SELECTED

1. San Francisco Bay Area (Standard Metropolitan Statistical Area). California has the most extensive public postsecondary education system in the country and leads in the development of the community college concept. In California, public higher education is the rule--for every student enrolled in a private postsecondary school, ten attend a public institution of higher education.

The state has almost one million secondary and postsecondary students in vocational education. Seventy-seven percent of the funding for vocational education comes from local sources, which shows the emphasis on vocational training. The San Francisco Bay Area SMSA includes the cities of San Francisco, the financial capital of the West; Oakland, an old, slow-growing (by California standards) city; plus a number of smaller cities that mark the shores of the Bay. The Bay Area has 12 community colleges with burgeoning enrollments, along with approximately 76 proprietary schools.

2. Miami (Standard Metropolitan Statistical Area). Florida was the only southeastern state with no regulations on proprietary schools. State education authorities suggested Miami as a site for study because of the wide range of vocational offerings in both public and private sectors. We found Miami varied from the other three cities in other interesting ways. Miami has clearly broken out of its old image (state song, "Old Folks at Home"). Nicknamed the "magic city," Miami has mushroomed 5,000 percent since 1910 and now has a population of 335,000, almost 20 percent of the state's population. Tourism is the largest industry, with 23 percent of Miami's work force employed in services. Unlike most big cities, Miami has gained in both black and white population over the past ten years.

Florida's and Miami's topsy-turvy growth has another side. While Miami has the highest gross assessed valuation per capita of the four cities in our study, the state's incidence of poverty is almost double the national mean. Southern political patterns in Florida are apparent, with 59 percent of the state's black children in 100 percent black schools. (Only two percent of black children in Massachusetts attend all-black schools.) Florida's divorce rate is the highest of the four states and double the national mean.

Enrollments in higher education in Florida favor public over private institutions at about a 4 to 1 ratio. In Miami, postsecondary vocational education is offered at a technical school, a large, multi-campus community college, and 136 proprietary vocational schools.

3. Chicago. The third largest city in the country holds 63 percent of Illinois' population, and Chicago's central-city population stands at 3,367,000. Like most big cities, Chicago has seen an exodus of affluent Whites and influx of poor Whites, Blacks, and Browns. The black population alone is almost 33 percent of the total population--an increase of 38 percent in the past ten years. No longer the Hog Butcher for the world, Chicago is the most industrialized city in our sample, with 31 percent of its work force in manufacturing. The split between public and private higher education in Illinois is not as dramatic as it is in California; for every student in private higher education, only two are in public institutions. Chicago's postsecondary vocational needs are met in part by the seven campuses of Chicago City College, three other public institutions, and 62 proprietary schools.

4. Boston (Standard Metropolitan Statistical Area). While half of Massachusetts resides in the Boston SMSA, the central city contains only 641,000 people. The population has decreased eight percent over the past ten years. Although Blacks make up only slightly more than 16 percent, they have increased 70 percent since 1960. The white population has dropped 17 percent. Eighty-three percent of the work force is evenly spread among manufacturing, trade, services, and government. In terms of education, Massachusetts is the flip-side of California; for every one public institution, Massachusetts has three private schools. Following the New England "localist" tradition, 83 percent of the funds for vocational education are generated locally. Within the Boston SMSA, most vocational education resources go for secondary education. One brand-new community college serves the core city. Filling the void are 96 proprietary vocational schools and an assortment of private, nonprofit, two-year colleges.

SAMPLING OF SCHOOLS AND STUDENTS

A. Schools

We obtained the universe of public and proprietary schools that provide training for the six occupations under study from state listings, national accreditation lists, the Yellow Pages, and articles and advertisements in local newspapers. We phoned each school to find out their total enrollments and the anticipated number of graduates during the 1972-73 academic year. From these, we drew a random sample of 21 public and 29 proprietary schools (with replacements), large enough to yield sufficient graduates for study.

We sent a registered letter describing the study to each of the sample schools, asking them to participate. The project staff followed up to confirm each school's acceptance. All 21 public schools agreed to participate. Only two of the 29 proprietary schools declined, and they were replaced. One school, a member of a national chain, declined because of litigation pending with the Federal Trade Commission. The other school would give no reason. The distribution of public and proprietary schools by occupation and geographic area is displayed in Table 1, below.

[illegible] AND PROPRIETARY SCHOOLS RANDOMLY SELECTED FOR [illegible] BY AREA AND GEOGRAPHIC AREA

	San Francisco Bay Area		Chicago		Boston		Miami	
[illegible]	Public	Prop.	Public	Prop.	Public	Prop.	Public	Prop.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]		[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] Totals in Table 1 will exceed 21, as some schools [illegible] and were counted more than once.

B. Students and Graduates

According to Chart 1 below, the sampling for this study was divided into three pieces--a sample of students just entering occupational programs in these 50 schools, a similar sample of near-graduates, and a sample of graduates who had been out of school up to one year or from three to four years. We chose recent graduates as well as older graduates to see if any occupational differences held up in the long run.

CHART 1

DESCRIPTION OF SAMPLES

Sample size	Beginning 1176	Graduating 1370	Follow-up 2270	Total 4816
Type of survey	Questionnaire administered in classroom	Questionnaire administered in classroom	Telephone and personal interviews	
Survey conducted by	Judy Clark Univ. of California, Berkeley Oct.-Nov. 1973	Drossler Research Corp. March-April 1973	National Opinion Research Center Nov. 1973-Feb. 1974	

1. Beginning Students: We asked all 50 schools to identify students in the six selected occupations who had begun their programs in September, 1973. We asked the schools to note students who were studying for a certificate, diploma, or associate's degree, whether they were full- or part-time, and whether they were going to school during the day or at night. Judy Clark, of the Berkeley Center, visited each school and administered the questionnaires. (See Table 2 for a distribution of beginning students.)

TABLE 2

[illegible] BEGINNING STUDENTS IN PUBLIC AND [illegible] PROGRAMS, BY PROGRAM AND GEOGRAPHIC REGION

	San Francisco Bay Area		Miami		Chicago		Boston		Net total
[illegible]	[illegible]	Prop.	Public	Prop.	Public	Prop.	Public	Prop.	
[illegible]	[illegible]	14		-	22	34	61	12	191
[illegible]	-	-	15	21	58	45	33	7	179
[illegible]	43	23	-	-	-	-	49	20	203
[illegible]		-	42	23	16	67	-	-	148
Secretarial	8	47	18	56	17	50	61	22	279
[illegible]	46	44	21	36	-	-	-	-	147
[illegible]	153	188	96	136	113	196	204	61	1147

2. Graduating Students: We asked the 50 schools to identify those students who were graduating in the spring of 1973 in the six occupational programs under study, and the San Francisco-based Drossler Research Corporation and their local agents in the four cities administered a questionnaire to each of the 1,370 students identified. (See Table 3 for the distribution of graduating students.)

[illegible] GRADUATING STUDENTS IN PUBLIC AND PROPRIETARY SCHOOLS BY [illegible] PROGRAM AND GEOGRAPHIC AREA

	[illegible] Area		[illegible]		[illegible]		Minor		Net totals
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-		225
[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-	-	[illegible]		-	-	[illegible]
[illegible]	-	-	[illegible]	[illegible]	-	-	[illegible]	-	[illegible]
[illegible]	-	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

3. Graduates: The National Opinion Research Center (NORC) sent representatives to each school to create lists and addresses of all 1970-71 and 1972-73 graduates. In most cases the schools gave us complete access to their records, but in a few we had to settle for lists made up for us, usually because the records were in poor condition. These visits produced a total sample of [illegible]. Of those graduates, [illegible] were ineligible because their graduation date fell outside our parameters, or they graduated from the wrong [illegible], or they were out of the country. A few had died or were [illegible]. Through NORC's intensive tracking, a remarkable [illegible] percent of the remainder [illegible] were located and interviewed in person by [illegible]. Only 15 percent of the [illegible], were not [illegible]

not be found and 6) refused to participate. For a lucid and informative account of the unorthodox methods used by NORC, read Doris Newman's report--Appendix 1. (See Table 4 for the distribution of the graduates.)

[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	-	-	291
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	45	15	262
[illegible]	[illegible]	[illegible]			[illegible]	[illegible]	-	-	441
[illegible]			[illegible]	[illegible]	-	-	104	57	462
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	386
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	[illegible]	114	388
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	177	211	2270

Chapter 3

THE SCHOOLS

We surveyed the 50 schools through mailed questionnaires and telephone interviews to learn more about their characteristics and to isolate those that affected how well their graduates fared in the labor market.

The 21 public schools were made up of 16 community colleges, three regional or area technical schools, and two hard-to-categorize postsecondary schools--a public business college and a trade high school (since closed) that offered a postsecondary certificate. The 29 proprietary schools were made up of seven sole proprietorships and 22 corporations (which included three schools that belonged to national chains and four schools that were subsidiaries of larger corporations).*

Although these public and proprietary schools were located in the same cities and offered the same programs, they differed considerably from each other.

Despite the current popularity of "career education," over 75 percent of the public schools in this study stated their highest priority was educating students for life and only secondarily mentioned training for employment. To meet this stated objective, public schools' vocational programs contained considerably more general or nonemployment-related coursework than the single-purpose proprietaries who gave top priority to training students for employment.

The public schools offered more resources to their students than the proprietaries, but proprietary students used their relatively meager resources more intensely. For example, those resources traditionally connected with broad, general education--social and athletic activities and large libraries--were provided more consistently and used more heavily in the public schools than in the proprietary. On the other hand, in keeping with their narrow, employment-related mission, proprietaries allocated more resources to job placement activities and their students used them more heavily than students in the public schools used theirs. Also, while proprietaries offered fewer remedial training programs and financial aid services, these were reportedly used more intensely than the same services in the

*

public schools. Our average proprietary school offered two occupational programs, compared with an average of eleven programs for the public schools.

First-time visitors at public schools often need a map to avoid getting lost in new and sprawling complexes. Proprietary schools sometimes set up shop in equally fancy headquarters but more often, they do business in rented quarters over the local dime store, in refurbished factories, or in storefronts. "Take your average university president's office and board room, divide by two, and you get the size of the average proprietary school," Jack Tolbert, a proprietary school owner, told us. That formula wasn't far off. The 29 proprietary schools in this sample had full-time enrollments ranging from 14 to 2,300 students, but the average proprietary school enrolled 291 students. Public school enrollments ranged from 120 to a whopping 14,000-plus, with a large average school enrollment of 7,867--some 27 times larger than the average proprietary school.

Most proprietary vocational programs were short--about half as long as corresponding programs in the public sector. The proprietary programs were more intensive, with students attending school an average of 25-30 hours each week, as opposed to the more leisurely public programs where students attended 15 hours per week, on the average.

The proprietary programs were not only shorter but more flexible than comparable public programs. Proprietary students could begin their programs, on the average, twice as often as public students and could complete them significantly more often by taking only morning or afternoon classes ($p<.01$).* An interesting note--the few public schools that allowed such flexibility viewed it as "innovative."

The proprietary schools in this sample were more established than the public. The oldest was founded in 1863, and the youngest in 1971, with an average founding date of 1938, making them, on the average, 14 years older than the public schools. Their founding dates ranged from 1904 to 1971, with an average of 1952. We questioned, though, if age was really an indicator of a school's stability, or whether the age of these proprietary schools was merely an illusion. Perhaps schools are regularly bought and sold but retain the "Established 1909"

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*The statement that a finding is "significant" only means that the finding is not due to chance. For example, our statement that proprietary students could complete their programs significantly more often by taking only morning or afternoon classes, followed by the notation ($p<.01$), means that, if we repeated the observation 100 times, we would get the same result 99 times. We will not report findings as significant where the probability is less than 95 percent.

appearance of stability. This idea did not hold up, though, as a school's age and years under current ownership were strongly correlated ($r=.46$, $p<.008$). Our experience corroborated this finding. Since the beginning of the study in 1972, two schools have been sold (one from a large, public corporation that had sustained heavy losses and was divesting itself of its school operations). One unaccredited school went out of business suddenly, leaving a number of students stranded with little or no recourse, although the attorney general's office filed suit against the school to recover the students' money.

Interestingly, for all the surface differences between public and proprietary schools, the programs did not differ much. Lectures were the most popular means of conveying information in both kinds of schools. The use of laboratories and unpaid and paid work-experience for "hands-on" training were evenly distributed between the schools. There was a tendency for proprietary schools to use programmed instruction more heavily than public schools (66% to 44%).

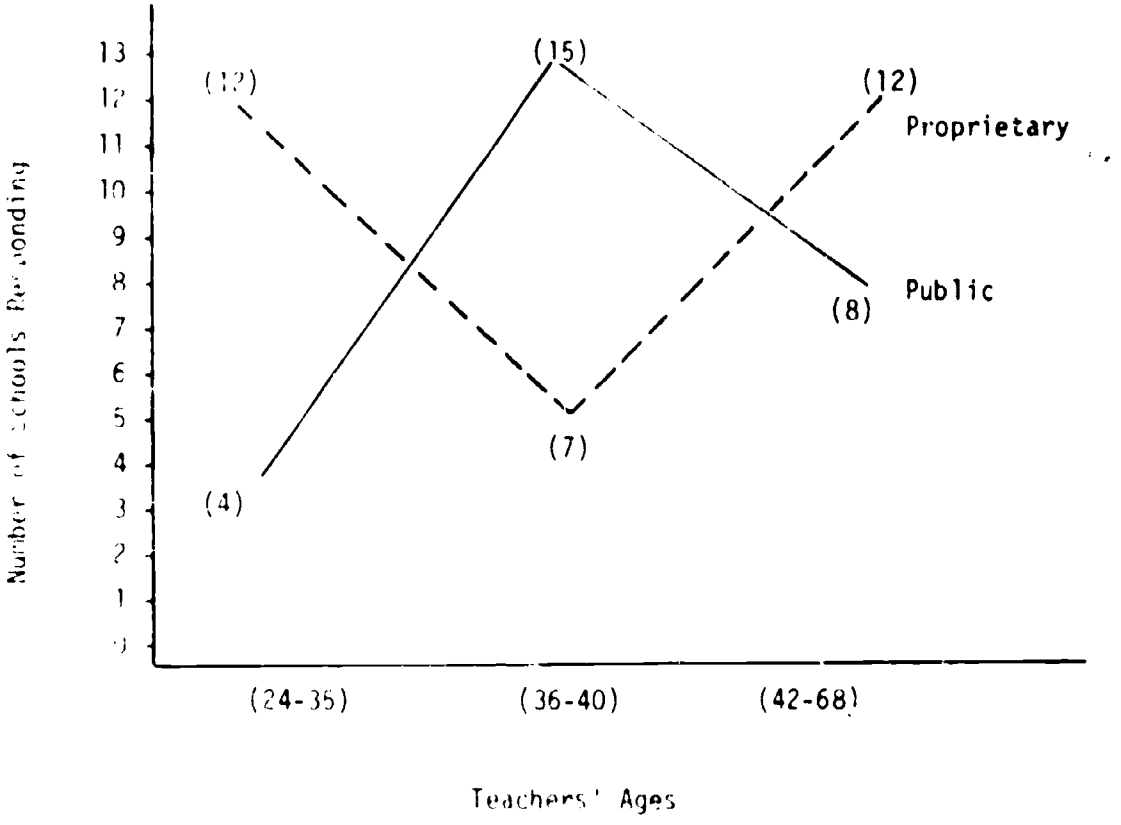
Both types of schools had relatively "open" admission, but certain requirements were in effect. Most proprietaries stated that high school graduation was a prerequisite for admission, but the student data presented later indicated this requirement was not enforced in all schools. A third of the public schools stated they practiced "open admissions"; the remaining two-thirds required a high school diploma or GED for admission. In both sectors, there were schools, most often those with a technical orientation, that had additional standards, such as a certain score on a general intelligence aptitude or ability test and a minimum high school grade point average.

On the surface, there was not much difference between public and proprietary teachers. While the average age of the public and proprietary teachers was almost the same (public = 39, proprietary = 40), the proprietary teachers clustered around the young and the old, and the public teachers clustered around the middle. (See Table 5 on the following page.) Proprietary teachers had less formal education behind them than their public counterparts. On the average, proprietary teachers had completed two years of college (most often with an AA degree) and public teachers had a bachelor's degree. Both groups had about three years of work experience behind them, although the proprietary teachers had a little more.

However, a striking set of differences emerged when we looked at teachers' compensation and working conditions. Most public teachers' salaries were predetermined by objective, bureaucratic means (age, length of service, prior education), while proprietary teachers, for better or worse, were often compensated by computing what they were worth on the market, working at their trade, plus a "keeper," or an increment above their market value--just enough to keep them employed.

TABLE 5

AVERAGE AGE OF TEACHERS BY PUBLIC AND PROPRIETARY SCHOOLS
(n = 58)



This relationship to the market showed itself again when we arranged the occupations taught in their order of status (and pay) and compared proprietary teachers' salaries with them. Proprietary salaries were highly correlated with the status of the occupational program ($r=.46$, $p<.006$), with the highest status program teachers (accounting) getting the most and the lowest status teachers (cosmetology) getting the least. The salaries of public teachers showed a barely significant, but inverse, correlation to occupational status. Instead, they were most highly correlated with academic credentials ($r=.59$, $p<.001$).

Even though the majority of proprietary teachers worked a 12-month year (with time out for vacations) and most public teachers worked a nine-month year, proprietary teachers were paid, on the average, about 65 percent of what public teachers earned. (See Table 6.)

TABLE 6

PUBLIC AND PROPRIETARY AVERAGE ANNUAL TEACHERS' SALARIES BY OCCUPATIONAL PROGRAM

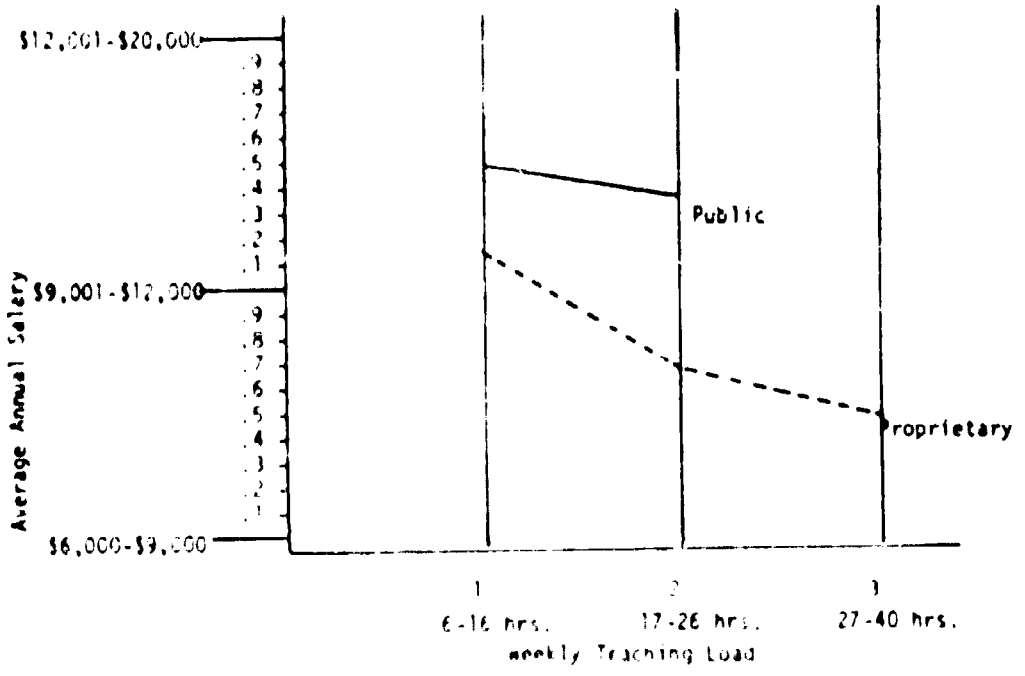
Program	Public	Proprietary
Accounting	$11,401	$8,400
Electronic data processing-programmer	$11,491	$8,010
Dental assisting	$9,601	$6,600
Secretarial	$9,991	$6,510
Cosmetology	$9,991	$6,000
Weighted Means	$10,621	$6,870

Note.--Electronic technicians omitted because two schools did not respond to this item.

Proprietary teachers, who were already earning less than their public counterparts, worked harder. These teachers spent an average of 27 hours per week in class, while public teachers spent 10 hours. As Table 7 shows, proprietary teachers' earnings and teaching load were negatively related ($r=-.70$, $p<.001$)--the less the proprietary teacher earned, the more hours he taught. There was a similar correlation for the public teachers, but it was considerably weaker.

TABLE 7

AVERAGE ANNUAL SALARY BY WEEKLY TEACHING LOAD
IN PUBLIC AND PROPRIETARY SCHOOLS



Note--No public teachers taught more than 26 hours per week.

Key: Salary
1 = $6000-9000
2 = $9001-12000
3 = $12001-20000

Teaching load
1 = 6-16 hrs. per week
2 = 17-26 hrs. per week
3 = 27-40 hrs. per week

Proprietary schools were also sensitive to how they used costly forms of instruction. When we arrayed the occupations in prestige order, with accounting at the top and cosmetology at the bottom, compared salaries at each level, and added a new column called "Teaching Load," we could see that teaching load and occupational prestige worked in opposite directions--low-cost labor was used more intensively in the low-status occupational programs. The correlation between teaching load and occupational programs was strong ($r=.57$, $p<.001$) but there was no significant correlation between these variables in the public schools. Table 8 shows how proprietary schools got the most out of low-cost instruction. How then do these instructional costs compare with comparable public programs after taking teaching load into account?

TABLE 8

BREAKDOWN OF AVERAGE ANNUAL SALARY, TEACHING LOAD AND INSTRUCTIONAL COST PER WEEK BY OCCUPATIONAL PROGRAM
(PROPRIETARY SCHOOLS ONLY)

Program	Average Annual salary	Average weekly teaching load	Average instructional cost per week
Accounting	1.80	1.80	1.00
Electronic data processing-programmer	1.67	2.33	.72
Dental assisting	1.20	2.20	.55
Secretarial	1.17	2.14	.55
Cosmetology	1.00	3.00	.33

Note.--Electronic technician omitted because two proprietary schools did not respond on this item.

Key: Salary
1 - $6,000-9,000
2 - $9,001-12,000
3 - $12,001-15,000

Teaching load
1 - 6-16 hrs. per week
2 - 17-26 hrs. per week
3 - 27-40 hrs. per week

This contrast has considerable importance because, as pointed out earlier, teachers' salaries made up almost all of the cost of public classroom instruction (94.4 , Morsch 1970). Presumably, a similar pattern held in proprietary schools. The data indicated quite clearly that public occupational programs were about 2 3/4 times more extensive than comparable programs in proprietary schools. When we also considered that most public teachers were on a nine-month contract and proprietary teachers were on a 12-month contract, and that proprietary programs were, on the average, half as long as public programs, the gap widened still further. (See Table 9.)

TABLE 9

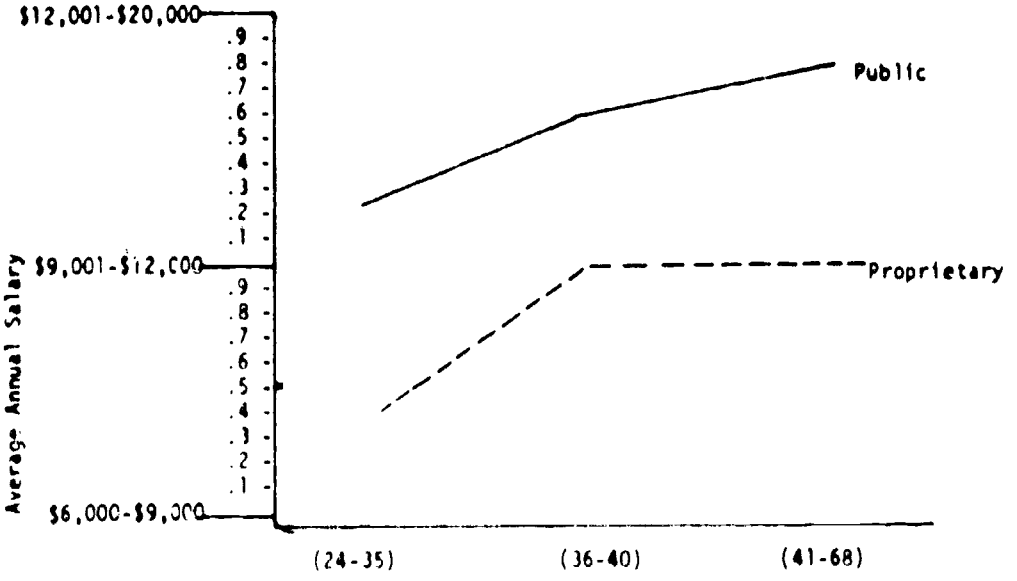
AVERAGE PUBLIC AND PROPRIETARY WEEKLY TEACHING COSTS
BY OCCUPATIONAL PROGRAM

Program	Average Proprietary weekly teaching cost	Average Public weekly teaching cost	Is proprietary less?	How much less?
Accounting	1.00	2.00	Yes	50%
Electronic data processing-programmer	.72	1.89	Yes	38%
Dental assisting	.55	1.22	Yes	45%
Secretarial	.55	1.55	Yes	35%
[illegible]	.33	1.17	Yes	28%
[illegible]	.54	1.60	Yes	36%

These data show clearly how heavily the market figured in what proprietary schools paid their teachers. They were not as highly credentialed as their public counterparts and they were paid less and worked more. A plausible hypothesis was that proprietaries (either because they were marginal operations or because they were trying to maximize profits) recruited young, uncredentialed teachers for low pay and did not pay them much more as they grew older. Table 1 showed almost 40 percent of the proprietary teachers were in the youngest group, about 20 percent in the middle, and the other 40 percent in the oldest. If we superimpose salary over this age distribution, we see a few (20%) middle-aged teachers were paid more than the youngest (40%), but they could expect no more as they grew older. (See Table 10.)

TABLE 10

AVERAGE ANNUAL SALARY BY TEACHERS' AGE FOR PUBLIC AND PROPRIETARY SCHOOLS
(n=54)



Salary Key: 1 = $6000-9000
2 = $9001-12000
3 = $12001-20000

There was no correlation between proprietary teacher age and salary, but in the public schools, teachers' age and salary were strongly correlated ($r=.47$, $p<.01$).

This finding suggests that proprietaries may have had a captive teacher market--a large group of older teachers who did not have the credentials to transfer into more lucrative public teaching. They were also too old to return to their trades.

Does a school's being accredited make any difference? The process of accreditation intervenes between the marketplace and the school, softening some of the harsh contrasts we have displayed. The school's age and accreditation status are positively related ($r=.56$, $p<.001$), with the older schools being accredited more often. Teachers with higher academic credentials, who were paid more and taught less, were employed more often by accredited proprietary schools. Table 11 shows the strength of these correlations.

TABLE 11

PROPRIETARY SCHOOL ACCREDITATION AND ACADEMIC CREDENTIALS, TEACHER SALARIES, AND TEACHING LOAD

Is proprietary school accreditation related to:		Correlation
Higher academic credentials?	Yes**	.61
Higher teacher salaries	Yes*	.40
Lighter teaching loads?	Yes**	.58

*$p < .016$
**$p < .001$

The differences that stand out between the public and proprietary schools in this sample are: a) Proprietary schools had fewer resources but used them on specific programs to prepare students for successful employment; b) proprietaries were older, smaller, more flexible, and offered shorter courses (Both public and proprietary programs delivered nearly all of the lecture method and, from our limited look

at actual classrooms, there did not appear to be much difference in how the training was delivered.); c) proprietary school teachers had less formal education behind them, although they had a little more work experience; and d) proprietary teachers were paid, on the average, 70 percent of what public school teachers earned, and they worked almost 1 1/2 times as many hours each week. Accreditation seemed to improve the situation of the proprietary teachers.

What difference did it all make? One possible answer is that employing teachers with standard academic credentials, who could command higher wages and better working hours, made a higher "quality" program which better prepared students for employment. An alternate answer is that academic credentials and salaries have little or no bearing on teaching students occupational skills. We asked each school to estimate how much their graduates would earn six months and three years after graduation, and found public and proprietary schools had the same expectations. This finding indicates that either the schools had unrealistic expectations for their graduates or teachers' pay and working conditions were not related to the graduates' occupational success.

Chapter 4

PUBLIC AND PROPRIETARY STUDENTS IN SCHOOL

This chapter gives snapshot views of 1,176 students who had just started at 50 public and proprietary schools, and 1,370 students who were about to graduate from these same programs. The data presented on the following pages provides answers to the following questions:

> Were there any differences in the backgrounds and abilities of public and proprietary students as they began their occupational programs?
>
> What were the differences between the students when they were about to graduate?
>
> Can we make reasonable hypotheses about student characteristics associated with successful program completion in both types of schools by looking at these differences?

SUMMARY

Our evidence indicates that proprietary schools recruit, and probably hold, students with fewer resources more effectively than the public schools. There was a significant trend for less advantaged students to choose proprietary schools. When we compared their characteristics with the students who made it through to graduation, we found that the more advantaged students persisted better in public schools, while their less advantaged counterparts fared better in the proprietaries.

Although the proprietary schools recruited students with lower ego levels, they could not see them through to graduation. Apparently, a student needs a certain threshold level of ego development to complete an occupational program. We also found low-ego students felt less confident about completing school. (See Appendix 3.)

Public students began and ended their programs rating the adequacy of their training slightly lower than very good, although the students who did not make it through were not there to cast their

vote at graduation. Proprietary students who also evaluated their training as slightly lower than "very good" when they began their programs rated their schools lower at graduation, but the difference between public and proprietary ratings was not significant.

How did students' expectations change from their first classes to graduation? The proprietary students' lifetime educational expectations dropped significantly, while the public students' did not. The less advantaged students may drop out of the public programs, thereby raising the educational expectation scores--or the difference may reflect changed expectations by the proprietary students, or both. Since neither public nor proprietary occupational training is an easy route into higher education, proprietary students' expectations seem more realistic. The salary expectations of graduating public students outstripped the proprietary, but when we considered public students worked and earned more, and expected more, the difference between them disappeared.

The problems of matching independent cross-sectional studies like ours on beginning and graduating students are well known. Sometimes these studies raise more questions than they answer. The only way to get at changes in subjects over time with absolute reliability is to follow the same subjects. Recognizing this, the National Institute of Education awarded us a grant to follow the same group of beginning students through their training to get a more complete and definitive view of the outcome. In that study, we will test the following hypotheses:

> Lower educational status students will persist better in proprietary schools, except for those with bachelor's degrees who will drop out.
>
> Ethnic minority students will persist better in proprietary schools.
>
> Students with low ego development will not persist in either kind of school.
>
> Students with poor verbal skills will either drop out of public schools or their skills will be improved.
>
> Students with the highest socioeconomic status will opt out of both kinds of schools early--possibly the proprietary student for employment and the public student for higher education.
>
> Public school students who were high school dropouts prior to training, working more than 20 hours per week, will either drop out of training or opt out early for employment.

DETAILED ANALYSIS

Readers should not accept our findings and conclusions without scrutinizing the underlying data included in this chapter. The next few pages are a simplified course on how to interpret the statistical analyses we used.

The purpose of the analysis was to uncover the association between variables--not to imply cause and effect. A researcher must find a systematic way to analyze large amounts of data for these associations. Guided by earlier research, common sense, and hunches, we labeled some variables "independent variables" and others "dependent variables" and searched for relationships between them.

We found that a student's educational status* and ethnicity were often associated with all other background characteristcs in a systematic way. These two independent variables--educational status and ethnicity--formed the framework for the analysis. They are almost independent of each other ($r=.09$, $p<.001$).

We will use either "ethnicity" or "educational status" as the vertical independent variable (depending on which is more strongly associated with the dependent variable) and "type of school" as the horizontal variable to describe differences and similarities between public and proprietary students.

---

*Educational status refers to the level and status of conventional education reported by the student. The variable has four levels which are:

1. Dropouts: students who reported they did not complete a high school program but were in postsecondary vocational training.

2. Graduates of a general or vocational high school program: students who reported completing a high school program designated either "general" or "vocational" but not "college preparatory." Project Talent (1968) indicates these students are in the lower ability quartiles.

3. Graduates of a college preparatory high school program: students who completed a high school program designated "college preparatory."

4. Bachelor's Degree and higher: students who completed a college program and were awarded a bachelor's degree or a graduate degree.

1. Beginning Students

We asked, "Are there any age differences between public and proprietary students?" For the answer we used a statistical tool called an analysis of variance that is a simple measure of association between one or more independent variables and a single dependent variable. An earlier analysis indicated a strong association between a student's ethnic group and his age--Blacks tended to be the oldest, students of other ethnicities next oldest, and Whites the youngest. When we looked for age differences between the public and proprietary students, we used "ethnic group" as one of the independent variables and the student's type of school (public or proprietary) as the other. Using the analysis of variance, we could tell how the variable we chose to put inside the table as the dependent variable--in this case, "age"--was associated with either or both independent variables.

TABLE 12

BEGINNING STUDENTS' AGE BY ETHNICITY AND TYPE OF SCHOOL

	Public	Proprietary	Weighted Means
White	2.48 (366)	2.48 (308)	2.48
Black	3.34 (100)	2.86 (97)	3.10
Other Ethnicities	2.95 (97)	2.87 (166)	2.91
Weighted Means	2.74	2.64	

Key: 1 = 17 or less
2 = 18-20
3 = 21-23
4 = 24-26
5 = 27 plus

Table 12 is an example. In each of the six cells inside the table, the numbers in parentheses indicate the number of students who fell into that category. The other number (not in parentheses) indicates an age "score" for students in that cell which can be converted to a student's real age by consulting the "key" beneath the table.

For example, the (306) in the upper left corner means that 306 white students attended public schools. The 2.48 indicates an average age score for those students. A cell with less than 15 respondents was left blank. Using the key, you can see that the average age for those white students going to public school was just under 19 years.

Using the statistical technique of analysis of variance, we could tell how the independent variables (those outside the table) were associated with the dependent variable (the one inside the table). The extent of that association was labeled either "not significant," a "nonsignificant trend," or a "significant" association. A "significant" finding is simply one not produced by chance. (See footnote on page 21 in Chapter 3 for a more complete explanation.)

Significant associations and nonsignificant associations or trends, are shown along the vertical and horizontal margins of each table. The scores in the margins represent averages (or means) weighted by the number of respondents. They are weighted so a small number of respondents in one cell does not disproportionately affect the average. The scores shown in each of the margins indicate an average score for the dependent variable at various levels of the two dependent variables.

For example, in Table 12 the number 2.48 at the top of the vertical margin indicates the age score for all Whites, and the number at the left side of the horizontal margin, 2.74, indicates an age score for all students in public schools. A comparison of the 2.48 age score with the other scores in the vertical margin shows Whites were the youngest of any ethnic group. A comparison of the 2.74 with the age score for proprietary students shows the public students were slightly older. The narrative describes the strength of these and other associations with probability or significant statements.

We also wanted to know if the findings shown in the vertical margins were products of chance. To test for the differences between those averages in the margins, we used a statistical technique called a t-test. We have also expressed the results of these tests between means as statements of probability. For example, in Table 12 the difference between the ages of Whites and Blacks was significant ($p<.005$).

From these data we can answer our question: "Yes, there was a slight difference in age between beginning public and proprietary students, but it was a nonsignificant trend. The results may have been produced by chance."

◄

TYPE OF SCHOOL BY EDUCATIONAL STATUS AND ETHNICITY

Which kinds of students chose which schools? Educational status was significantly related ($p<.018$) to the type of school a student attended. Table 13 indicates that dropouts and college graduates were more likely to attend proprietary schools. The 49 proprietary students who had a bachelor's degree were not an advantaged group. Fifty-nine percent were noncitizens, and 90 percent of those were from ethnic minorities (the 20 such public students who were college graduates were mostly white citizens of the highest SES)* As the following tables show, these students, even though they graduated from college, had low socioeconomic status (Table 15), ego development (Table 16), earnings (Table 17), and future salary expectations (Table 24). Graduates of general/vocational high school programs were just as likely to go to public as proprietary schools, and graduates of high school college preparatory programs were more likely to attend public schools.

Ethnicity also was significantly related ($p<.001$) to the type of school a student attended. Whites were more likely to attend public schools while Blacks were right on the watershed, choosing public and proprietary schools equally. Students of other ethnicities were more likely to attend proprietary schools. The difference between the kind of school Blacks and students of other ethnicities chose was significant ($p<.01$).

*See Appendix 2 for a discussion of the SES index.

TABLE 13

BEGINNING STUDENTS' SCHOOL ATTENDANCE BY EDUCATIONAL STATUS AND ETHNICITY

Educational Status	White	Black	Other Ethnicities	Weighted Means
Dropout	1.63 (35)	1.50 (18)	1.55 (33)	1.57
High School--General or Vocational Program	1.47 (338)	1.49 (134)	1.61 (128)	1.50
High School--College Preparatory	1.40 (263)	1.54 (39)	1.56 (62)	1.46
Bachelor's or Graduate Degree	1.67 (30)	-	1.77 (35)	1.71
Weighted Means	1.47	1.50	1.60	

Key: 1 = Public
2 = Proprietary

RELATIONSHIP OF TYPE OF SCHOOL TO MAIN SOURCE OF INFORMATION ABOUT SCHOOL

Students were asked what they considered the most important source of information that helped them choose their current school. Results are shown in Table 14 which indicates that public school students relied more heavily on high school teachers and counselors and parents and peers for their information about school. Proprietary school students relied more heavily on unconventional sources such as television and the Yellow Pages for theirs. The effects were statistically significant ($p < .001$).

TABLE 14

BEGINNING STUDENTS' MAIN SOURCE OF INFORMATION ABOUT PRESENT SCHOOL, BY TYPE OF PROGRAM

Main Source of Information	Public	Proprietary
Parents, friends, and students	66% (377)	45% (274)
High school teachers and counselors	18% (103)	13% (76)
Unconventional sources (TV, Yellow Pages, newspapers, etc.)	16% (89)	42% (257)
Total	100%	100%

($\chi^2 = 100.81$, 2df)

SOCIOECONOMIC STATUS BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

A student's educational status was significantly associated ($p < .001$) with his socioeconomic status--a composite of his mother and father's education, their occupation, and his father's occupation. As a general trend, the higher SES students had more educational status. Those from high school college prep programs and those with four-year college degrees had significantly ($p < .01$) higher SES than students who had completed only eight years of school, dropped out

TABLE 15

BEGINNING STUDENTS' SOCIOECONOMIC STATUS BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	2.03 (37)	2.14 (51)	2.09
High School--General or Vocational Program	1.98 (301)	2.14 (304)	2.06
High School--College Preparatory	2.27 (200)	2.31 (167)	2.29
Bachelor's or Graduate Degree	2.50 (20)	2.18 (49)	2.28
Weighted Means	2.11	2.19	

Key: 1 = Low SES
2 = Medium SES
3 = High SES

of high school, or finished a general or vocational program. This is particularly true of the public students. However, the shift down in SES for the proprietary student who is a college graduate (to 2.18) shows they were not necessarily more advantaged than their less educated classmates. While there was a slight trend for proprietary students to have a higher SES, it was not significant.

EGO DEVELOPMENT BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

We reviewed various theories and measures of achievement motivation and de[illegible] in the [illegible] development [illegible] Adler [illegible] Freud's work [illegible] [illegible].

[illegible] development [illegible] motive, [illegible] ego levels tend to [illegible] intrinsically, [illegible] out of a sense of inner-[illegible] at lower ego levels tend to behave opportunistically, with a [illegible] dependence on extrinsic rewards.

The ego development concept is measured by a sentence completion test in which the subject completes a series of at least [illegible] stubs such as Education. . . or What gets me into trouble is. . . . See Appendix 3 for a more detailed discussion of this measure and examples of sentence completions.

Arrangements were made with Fred L. Strodtbeck, the director, and Stephen E. Hansell of the University of Chicago's Social Psychology Laboratory to identify and score protocols for the samples of students and graduates.

An earlier analysis indicated that educational status and ethnicity were both significantly associated with ego development: Those with higher educational status had higher levels of ego development statistically significant at each level (except for those with bachelor's degrees). Whites had the highest ego levels, followed by Blacks and students from other ethnicities. Because both independent variables were significantly associated with ego development, we "controlled" for ethnicity, or spread the effects of ethnicity evenly across both independent variables to see if the results changed. They did not.

Type of school was associated with ego development ([illegible]). Public students had higher ego development scores.

TABLE 16

BEGINNING STUDENTS' EGO LEVEL BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	2.41 (37)	2.31 (51)	2.35
High School--General or Vocational Program	2.74 (301)	2.58 (304)	2.66
High School--College Preparatory	2.95 (200)	2.74 (167)	2.84
Bachelor's or Graduate Degree	2.85 (20)	2.53 (49)	2.62
Weighted Means	2.79	2.60	

Key: 1 = Low (2, Δ)
2 = Medium low (Δ/3, 3)
3 = Medium High (3/4)
4 = High (4+)

GRAMMAR ERROR SCORES BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Grammar Error Score is a measure designed to tap the students' internalization of standard English. We use the term "internal- ization" [illegible] was being evaluated. The [illegible] ment protocol [illegible] scored for three classes of [illegible] errors:

1. [illegible] errors in which the subject's [illegible] sentence [illegible] grammatically.
2. [illegible] errors [illegible] grammatical errors [illegible]
3. [illegible]

Error scores [illegible] three [illegible] sentence [illegible] total possible errors [illegible]

Table 17 indicates that educational status was significantly associated with grammar error scores ($p<.001$). Except for a slight nonsignificant reversal with college graduates, a pattern emerged for college preparatory high school graduates to make the least number of errors, followed by the general/vocational high school graduates and, finally, the dropouts who made the most errors. The results were also significant at each level of educational status ($p<.005$). We scored the written protocols for grammar errors in the student's native language if written in Spanish. Since 59 percent of proprietary students with BA degrees were noncitizens, most of Spanish descent, their grammar errors would probably have been higher if scored in English.

While proprietary school students made slightly more grammar errors than public students, the results were not significant and may have been produced by chance.

TABLE 17

BEGINNING STUDENTS' GRAMMAR ERRORS BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	3.21 (37)	3.47 (57)	3.36
High School--General or Vocational Program	2.98 (301)	2.95 (304)	2.96
High School--College Preparatory	2.60 (200)	2.76 (167)	2.67
Bachelor's or Graduate Degree	2.60 (20)	2.73 (49)	2.68
Weighted Means	2.85	2.91	

Key: 1 = 0 Errors
2 = 1 Error
3 = 2 Errors
4 = 3 Errors

HOURS WORKED PER WEEK FOR PAY BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational status was not associated with hours worked, but type of school was significantly related ($p<.001$). Public students worked many more hours each week for pay than their proprietary counterparts.

TABLE 18

BEGINNING STUDENTS' HOURS WORKED/WEEK BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	2.08 (36)	1.67 (46)	1.85
High School--General or Vocational Program	2.15 (293)	1.78 (296)	1.96
High School--College Preparatory	2.08 (197)	1.71 (164)	1.91
Bachelor's or Graduate Degree	2.32 (19)	1.54 (48)	1.76
Weighted Means	2.12	1.72	

Key: 1 = 0 Hours
2 = 1-20 Hours
3 = 21-40 Hours
4 = 41+ Hours

WEEKLY EARNINGS BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational status was not associated with earnings either. Type of school and weekly earnings were significantly related ($p < .001$). Proprietary students earned much less than the public students (see Table 19). But, as shown earlier, proprietary students worked fewer hours each week for pay.

TABLE 19

BEGINNING STUDENTS' EARNINGS BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	2.23 (35)	2.0 (47)	2.10
High School--General or Vocational Program	2.57 (288)	1.99 (293)	2.28
High School--College Preparatory	2.56 (191)	1.97 (159)	2.29
Bachelor's or Graduate Degree	2.83 (18)	1.64 (47)	1.97
Weighted Means	2.55	1.95	

Key: 1 = $0 per week
2 = $1 - 25 per week
3 = $26 - 75 per week
4 = $76 + per week

SELF-PERCEIVED PROBABILITY OF FINISHING SCHOOL BY ETHNICITY AND TYPE OF SCHOOL

We asked each student how confident he or she felt about finishing the vocational program. As Table 20 shows, ethnicity was positively associated ($p<.001$) with the dependent variable. Whites felt most confident and Blacks and students of other ethnicities felt less sure.

TABLE 20

BEGINNING STUDENTS' SELF-PERCEIVED PROBABILITY OF FINISHING SCHOOL BY ETHNICITY AND TYPE OF SCHOOL

Ethnic Group	Public	Proprietary	Weighted Means
White	1.44 (363)	1.24 (308)	1.34
Black	1.61 (99)	1.41 (-	1.51
Other Ethnicities	1.43 (97)	1.54 (167)	1.50
Weighted Means	1.46	1.36	

Key: 1 = Excellent
2 = Medium (50/50)
3 = Not so good

SELF-PERCEIVED PROBABILITY OF FINISHING SCHOOL BY EGO LEVEL AND TYPE OF SCHOOL

Ego development was also positively associated with how confident students were of finishing. As Table 21 shows, those with higher levels of ego development felt significantly ($p < .001$) more sure of finishing trade programs. This finding was consistent across all [illegible] programs.

TABLE 21

[illegible] SELF-PERCEIVED PROBABILITY OF FINISHING SCHOOL, BY EGO LEVEL AND TYPE OF SCHOOL

[illegible]	Public	Proprietary	Weighted Means
Low	1.58 (67)	1.52 (86)	1.55
Medium Low	1.45 (130)	1.47 (165)	1.46
Medium High	1.49 (215)	1.28 (215)	1.38
High	1.37 (150)	1.21 (110)	1.31
Total	1.46	1.36	

Key: 1 = Excellent
2 = Medium (50/50)
3 = Not so good

ADEQUACY OF TRAINING BY ETHNICITY AND TYPE OF SCHOOL

Table 22 shows ethnicity was significantly related ($p<.001$) to students' perceptions of adequacy of their training, with Blacks and students from other ethnicities the least satisfied and Whites the most satisfied.

Students who were beginning programs in public schools felt their training was as adequate as students beginning similar programs in proprietary schools.

TABLE 22

BEGINNING STUDENTS' RATING OF ADEQUACY OF TRAINING BY ETHNICITY AND TYPE OF SCHOOL

Ethnic Group	Public	Proprietary	Weighted Means
White	2.0 (364)	1.91 (300)	1.96
Black	2.33 (96)	2.18 (93)	2.26
Other Ethnicities	2.14 (95)	2.36 (160)	2.27
Total	2.08	2.08	

Key: 1 = Extremely adequate
2 = Very adequate
3 = Adequate
4 = Inadequate

LIFETIME EDUCATIONAL EXPECTATIONS BY ETHNICITY AND TYPE OF SCHOOL

Even after controlling for educational status, ethnicity was significantly associated with educational expectations ($p<.001$). Blacks had the highest educational expectations, students of other ethnicities next, and Whites the lowest.

The most interesting finding was that both public and proprietary students had identical educational expectations.

TABLE 23

BEGINNING STUDENTS' EDUCATIONAL EXPECTATIONS BY ETHNICITY AND TYPE OF SCHOOL

Ethnic Group	Public	Proprietary	Weighted Means
White	1.61 (342)	1.60 (294)	1.60
Black	1.98 (92)	1.88 (93)	1.93
Other Ethnicities	1.88 (94)	1.86 (157)	1.87
Total	1.72	1.72	

Key: 1 = 2-3 years of college--less than Bachelor's degree
2 = Bachelor's degree
3 = Graduate degree

SALARY EXPECTATIONS 3-5 YEARS AFTER GRADUATION BY EDUCATIONAL STATUS AND TYPE OF SCHOOLS

There was a nonsignificant trend for those with higher educational statuses to have higher salary expectations, particularly among the public students. Yet, 48 proprietary students who already held bachelor's degrees had the lowest salary expectations of all.

However, as Table 24 shows, proprietary and public students expected to earn about the same salaries three to five years after graduation.

TABLE 24

BEGINNING STUDENTS' SALARY EXPECTATIONS 3-5 YEARS AFTER GRADUATION, BY EDUCATIONAL STATUS AND TYPE OF SCHOOL

Educational Status	Public	Proprietary	Weighted Means
Dropout	2.68 (37)	2.82 (49)	2.76
High School-- General or Vocational Program	3.05 (29)	2.95 (302)	3.00
High School-- College Preparatory	3.03 (199)	3.03 (160)	3.03
Bachelor's or Graduate Degree	3.45 (20)	2.67 (48)	2.91
Weighted Means	3.03	2.93	

Key: 1 = Up to $7,000
2 = $7,001 - $10,000
3 = $10,001 - $13,000
4 = $13,000+

2. Upon Graduation*

What changes took place among these students as they proceed through school and ultimately prepared themselves for graduation and entry into the labor market? Although the study was not designed to answer this question definitively, we can at least make some hypotheses after comparing the beginning and graduating students on three dimensions. We compared the distribution of students by occupational program, educational status, and ethnicity and found very little change across this surface, and that was statistically not significant. (See Table 25.)

TABLE 25

DISTRIBUTION OF BEGINNING STUDENTS BY OCCUPATIONAL PROGRAM, EDUCATIONAL STATUS AND ETHNICITY
(in percents)

	Beginning	Graduating	Is the change significant?
OCCUPATIONAL PROGRAM			
Accounting	17	15	
Electronic Data Process	18	15	
Dental Assisting	17	18	NO
Electronic Technician	12	13	
Secretarial	23	25	
Cosmetology	14	12	
EDUCATIONAL STATUS			
Dropout	8	8	
High School--General or Vocational Program	51	52	NO
High School--College Preparatory	36	33	
Bachelor's or Graduate Degree	5	6	
ETHNICITY			
White	62	60	NO
Black	17	17	
[illegible]	21	22	

*For an intensive analysis of the graduating students' characteristics, see Wilms, PROPRIETARY vs PUBLIC VOCATIONAL TRAINING, Center for Research and Development in Higher Education, University of California, Berkeley, 1977.

Any changes we saw underneath this surface were likely due to either actual changes in students' characteristics or attrition. For example, our finding that graduating students were older than beginning students and that the public students were significantly older than the proprietary ($p < .04$) more likely stemmed from the passing of time (with public students staying in school longer) than attrition of younger students.

ATTENDANCE BY TYPE OF SCHOOL

Table 26 shows that students with fewer resources persisted better in proprietary schools. An analysis of variance showed educational status ($p < .02$) and ethnicity ($p < .01$) still significantly associated with students' attendance patterns at graduation.

TABLE 26

PUBLIC/PROPRIETARY ATTENDANCE BY EDUCATIONAL STATUS FOR BEGINNING AND GRADUATING STUDENTS

Educational Status	Beginning	Graduating	Is the change significant?
Dropouts	1.57 (86)	1.70 (96)	Yes*
High School-- General or Vocational Program	1.50 (600)	1.52 (584)	No
High School-- College Preparatory	1.45 (364)	1.45 (417)	No
Bachelor's or Graduate Degree	1.71 (65)	1.47 (61)	Yes*

*$p < .025$

Key: 1 = Public
2 = Proprietary

There was a pattern at graduation for more dropouts and graduates of the low-status high school general or vocational programs to complete proprietary school programs, but that group holding bachelor's degrees seemed to fall by the wayside. On the other hand, the students of higher educational status persisted better in the public schools.

Attendance by ethnic groups also supported the thesis that less advantaged students persisting better in proprietary schools. Table 27 shows there was no change for Whites who favored public schools both upon entering the programs and upon graduation. But Blacks and students from other ethnicities were more strongly represented in the proprietaries at graduation. While the trend for each minority ethnic group to favor proprietary schools was not strong enough to be statistically significant at entrance, the difference between Whites and the two ethnic minority groups became significant at graduation ($p<.01$) with the ethnic minorities favoring proprietary schools.

TABLE 27

PUBLIC/PROPRIETARY ATTENDANCE BY ETHNICITY FOR BEGINNING AND GRADUATING STUDENTS

Ethnic Group	Beginning	Graduating	Is the change significant?
White	1.47 (666)	1.47 (804)	No
Black	1.50 (195)	1.57 (196)	No
Other Ethnicities	1.62 (258)	1.68 (128)	No

Key: 1 = Public
2 = Proprietary

SOCIOECONOMIC STATUS

Both public and proprietary schools lost their highest SES students before graduation. Table 15 showed high SES and high educational status were associated. These students may have left school early for employment or transfer to four-year colleges.

TABLE 28

SOCIOECONOMIC STATUS BY TYPE OF SCHOOL FOR BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	2.11 (556)	2.02 (588)	Yes*
Proprietary	2.19 (571)	1.97 (627)	Yes **

*p < .05
**p < .005

Key: 1 = Low SES
2 = Medium SES
3 = High SES

EGO DEVELOPMENT

Because ego development is a stable measure (Loevinger, 1970) and does not change quickly over a person's lifetime, we assumed that differences between the time our student sample began and finished school were due to attrition.

As Table 29 shows, there was virtually no change in public students' ego development. Proprietary students were a different story. They demonstrated a clear increase in ego level, and that change fell evenly across different educational statuses.

This finding suggests that, although proprietaries recruit students with lower levels of ego development, the students with the lowest ego levels who behave in an impulsive, defensive manner do not complete their programs. They may eagerly respond to proprietary schools' advertising which often stresses "This is your chance-of-a-lifetime" and "Do it now!", only to find they don't have the motivation needed to complete the course.

TABLE 29

EGO LEVEL BY TYPE OF SCHOOL FOR BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	2.79 (558)	2.77 (602)	No
Proprietary	2.60 (571)	2.76 (638)	Yes*

*p < .005

Key: 1 = Low (2,4)
2 = Medium low (2/3,3)
3 = Medium high (3/4)
4 = High (4+)

GRAMMAR ERROR SCORES

Public schools claim they are "educating for life," so it was not surprising to find that students with poor verbal skills improved their skills, or they did not complete the programs. Table 30 shows no similar change for proprietary schools.

Although there was not a significant difference between their grammar error scores when they began training, the public students had improved significantly ($p<.031$) by graduation and the proprietary students lagged behind.

TABLE 30

GRAMMAR ERROR SCORES BY TYPE OF SCHOOL FOR BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	2.85 (558)	2.63 (596)	Yes*
Proprietary	2.91 (571)	2.89 (613)	No

*$p < .005$

Key: 1 = 0 Errors
2 = 1 Error
3 = 2 Errors
4 = 3 Errors

WEEKLY EARNINGS WHILE IN SCHOOL

Earnings and hours per week worked for pay operated the same way, so we have presented only hours per week. At graduation, both groups were working significantly ($p < .005$) more than when they began their programs.

TABLE 31

HOURS PER WEEK WORKED FOR PAY BY TYPE OF SCHOOL AND BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	2.12 (545)	2.41 (599)	Yes*
Proprietary	1.72 (554)	1.95 (626)	Yes*

*$p < .005$

Key: 1 = 0 Hours
2 = 1-20 Hours
3 = 21-40 Hours
4 = 41+ Hours

At graduation, the public student was still working and earning more. The changes were evenly distributed across educational status and ethnicity except for dropouts in public programs. Their working hours dropped significantly between entry and graduation, as Table 32 indicates.

This finding suggests that either the public dropout was forced to work less to finish school or that the harder working public dropout left before completing the program. After comparing this finding to the findings on page 52 which showed public dropouts persisted better in proprietary schools, we surmised this student dropped out of public training before finishing rather than decreased his workload.

TABLE 32

HOURS PER WEEK WORKED FOR PAY BY PUBLIC AND PROPRIETARY DROPOUTS AS BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	[illegible] (36)	1.75 (32)	Yes*
Proprietary	1.[illegible] [illegible]	1.74 (66)	No

*p<.025

Key: 1 = 0 Hours
2 = 1-20 Hours
3 = 21-40 Hours
4 = 41+ Hours

ADEQUACY OF TRAINING

While the proprietary students' evaluation of their training dropped significantly ($p<.025$) between the time they entered and graduated from their programs, it was still not significantly different from the public students' evaluation which remained constant.

TABLE 33

ADEQUACY OF TRAINING BY TYPE OF SCHOOL FOR BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	2.08 (596)	2.08 (596)	No
Proprietary	2.08 (553)	2.19 (631)	Yes*

*$p < .025$

Key: 1 = Extremely adequate
2 = Very adequate
3 = Adequate
4 = Inadequate

LIFETIME EDUCATIONAL EXPECTATIONS

Our study did not confirm that public schools were "cooling out" students whose educational aspirations were higher than their ability. As Table 34 shows, the public students' expectations shifted upward slightly from the time they entered their programs to the time they graduated. On the other hand, proprietary students' expectations declined significantly ($p<.005$).

TABLE 34

LIFETIME EDUCATIONAL EXPECTATIONS BY TYPE OF SCHOOL AND BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	1.72 (528)	1.73 (576)	No
Proprietary	1.72 (544)	1.57 (571)	Yes*

*$p<.005$

Key: 1 = 2-3 years of college--less than Bachelor's degree
2 = Bachelor's degree
3 = Graduate degree

SALARY EXPECTATIONS 3-5 YEARS AFTER GRADUATION

As shown in Table 24 on page 50, both beginning public and proprietary students had high salary expectations with no significant difference between them. However, as Table 35 shows, both public and proprietary students' expectations dropped, but the proprietary students' expectations dropped more--to the point where there was a significant difference ($p<.02$) between them at graduation.

But public students were working more hours per week and earning more in salaries than the proprietary students. Gurin (1970) and others have shown future expectations depend partly on a person's current conditions, so students' salary expectations should be related to current earnings. Weekly earnings and salary expectations three to five years after graduation were moderately correlated ($r=.29$, $p<.001$). In testing the relationship between type of school and salary expectations, we controlled for current earnings and the difference washed out.

TABLE 35

SALARY EXPECTATIONS 3-5 YEARS AFTER GRADUATION BY PUBLIC AND PROPRIETARY FOR BEGINNING AND GRADUATING STUDENTS

Type of School	Beginning	Graduating	Is the change significant?
Public	3.03 (553)	2.42 (546)	Yes*
Proprietary	2.93 (559)	2.74 (553)	Yes*

*p<.[illegible]

Key: 1 = Up to $7,000
2 = $7,001 - $10,000
3 = $10,001 - $13,000
4 = $13,000+

A major indicator of effectiveness was how well the graduates of these occupational programs did once they graduated successfully. Although proprietary school programs were, on the average, half as long, and their teachers were paid less and worked more, and they taught students who had fewer resources than public students, both teachers and students seemed to expect about the same occupational success for graduates whether they were in public or proprietary schools.

Our next chapter describes our findings on testing the hypotheses set forth for graduates.

CHAPTER 5

PUBLIC AND PROPRIETARY GRADUATES' EXPERIENCES

In this chapter we report on the results of interviews with 2,270 graduates of public and proprietary programs. We analyzed the data to test our central hypothesis:

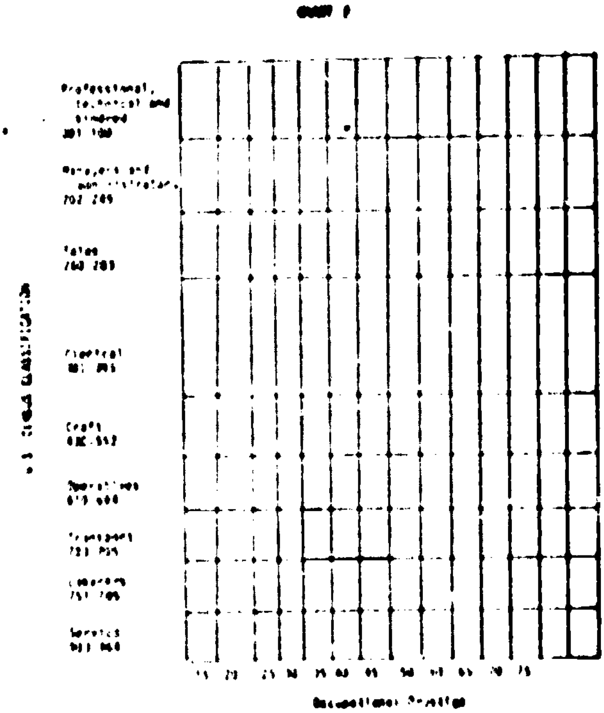
> After controlling for differences in students' backgrounds and abilities, graduates of proprietary schools will experience greater success in the labor market than graduates of comparable public programs.

We chose a variety of occupations for study. Three were classified by the U.S. Census as professional, one as clerical, and the other two as service occupations. One occupation was all-male, two all-female, and three mixed. The earnings for each occupation differed considerably and, within each occupation, graduates' background characteristics affected earnings and job progression. For example, in five occupations, older people earned more, but in the sixth that trend reversed itself, so we have analyzed each occupation separately.

We analyzed all six occupations along two major lines--the respondents' occupational life and their personal growth and attitudes--to test our central hypothesis. We also investigated whether differences in schools (how much teachers were paid, how many hours they worked, etc.) were related to graduates' success. Finally, we analyzed the costs to the graduates of each kind of training.

Careers. We began each occupational analysis by asking how public and proprietary graduates differed within each occupation and if those differences were related to the kinds of jobs respondents got after graduation. To set up a standard for jobs the respondents reported having, we placed each graduate's first job on a grid such as the following chart.

U. S. Census Occupational Classification by Occupational Prestige



Each employed graduate gave a description of his or her first and subsequent jobs, which the interviewer recorded. Those descriptions were later coded into a standard three-digit U.S. Census Occupational Code. The code ranged from 001 (accountant) to 983 (household laundress). The Census classification implied a hierarchy, but to make that hierarchy explicit, we also assigned each job of each respondent a "prestige score" created by Rossi, Siegel, and Hodge at NORC (see Chapter 2). We then grouped respondents with similar jobs together on the grid for the analysis.

We began the analysis with graduates' first job after graduation, paying particular attention to their earnings and progression. Next, we analyzed the occupational experience of those who changed jobs and followed that with an analysis of all respondents' current jobs (which may or may not have been their first job). Finally, we assessed the incidence and length of unemployment.

<u>Personal Growth and Attitudes</u>. Our second major line of analysis, the personal growth and attitudes of the respondents, tested a popular argument of proponents of general education--that general education courses foster more tolerant, [illegible] conceptually complex behavior. To test that notion, we [illegible] (1976) ego development as the major instrument to assess any differences in personal growth between the public and private graduates. (See Appendix [illegible] for a detailed discussion of [illegible]) [illegible] also analyzed [illegible]

[illegible]

To determine attitudes, we assumed that differences in occupational performance would be reflected in expectations and satisfaction. We analyzed what the respondents expected to earn and how adequate they felt their training was.

A person's earnings and the actual work done weigh heavily in overall job satisfaction, although there is no clear relationship between satisfaction and job performance (Robinson, et al., 1969). We selected the Wolf and Bradburn (1968) work-satisfaction index that addresses both components of job satisfaction--earnings and job content. The scale consists of three items that can be answered "very satisfied," "somewhat satisfied," "somewhat dissatisfied," and "very dissatisfied." The items are:

1. How satisfied are you with your earnings on your current job?

2. How satisfied are you with the kind of work you do?

3. Taking everything into consideration, how do you feel about your work (business) as a whole?

We asked these questions of all respondents who reported working full- or part-time within each occupation. We also searched for institutional characteristics associated with occupational performance, although this information was peripheral to testing our hypothesis. In studying institutions, we had to divide the school sample by occupation and, again, by type of school, which meant we sometimes had little variation in the school sample. Finally, we analyzed the costs of public and proprietary training to the graduate, based on the following formula and assumptions:

1. Potential Earnings minus Earnings while in School = Foregone Earnings

2. Foregone Earnings plus Program Charges to the Student = Total Costs to the Student

[Potential Earnings = unadjusted weekly earnings on first full-time job after graduation less 10% which represents an arbitrary value added by the training times weeks in school]

[Earnings while in School = unadjusted weekly earnings while in school times weeks in school]

[Program Charges = total charges by the school to the student]

We tested for differences between public and proprietary graduates' [illegible] characteristics in the beginning of each occupational

analysis and whether those differences were associated with the graduates' earnings. For example, where we found that public graduates were older than proprietary graduates and earned more, we "controlled" for the difference in age to minimize the effect of the preexisting conditions. Another example: If two people had similar jobs, but one had been on the job twice as long, the latter was likely to earn more. To correct for this effect, we controlled for job tenure which equalized the effect across the groups. Another way we controlled for differences was by grouping respondents according to those differences. For example, in most cases, Whites earned more than other ethnicities in comparable jobs. Where there was a significant "ethnic" effect, we have displayed the groups separately. Women always earned less than men on comparable jobs, so we have displayed their earnings separately. Finally, whenever we talk about earnings, we controlled for "region" to correct for any regional differences in salary and cost-of-living.

We used an analysis of variance routine that is based on the general linear hypothesis. For a detailed discussion of this procedure, see Bock (1973). Also, see Chapter 4 for a guide to interpreting the results.

Occasionally, we referred to an "interaction" effect. This means that the independent variables were not associated with the dependent variable in the same way. For example, if we analyzed first weekly earnings by type of school and ethnic background, we might find that Whites who went to public schools had significantly higher earnings than Whites who went to proprietary schools. Our analysis of variance routine would print that out and we would report it as an "interaction" between ethnic background and type of school on earnings.

I. Accounting Graduates' Experiences after School

A. SUMMARY

Our hypothesis was not confirmed or accounting graduates. Although proprietary graduates got accounting or related jobs significantly ($p<.001$) more often, only two out of ten proprietary and one out of ten public graduates got accounting or related jobs.

The data also showed that:

- Proprietary graduates got jobs as accountants significantly more often than public graduates, but in the long run, the public graduates earned a little more (in spite of having more women and ethnic minorities who depressed earnings of the sample) but the difference was not significant.

- Public graduates got their first jobs faster than proprietary graduates.

- On the first job, the initial earnings between public and proprietary graduates were not significantly different. Proprietary graduates tended to earn a little more, mostly because they were placed in somewhat better jobs and their sample had fewer ethnic minorities and women who earned less.

- Public graduates earned significantly ($p<.006$) more at the end of their first jobs and got significantly ($p<.001$) more promotions than proprietary graduates.

- Public graduates were significantly more satisfied with their earnings and their jobs, although taking everything together (overall satisfaction), the difference was not significant.

- Public graduates were significantly ($p<.05$) more satisfied with their earnings and their jobs. They rated their training as significantly ($p<.013$) more adequate than the proprietary graduates. Almost a third of the proprietary graduates would not go back to the same school compared with 12 percent of the public graduates who wouldn't.

- Thus, the proprietary graduates rated their training lower and fewer would repeat the school choice again because they intuitively knew the costs to them were higher than the value of the training. Because the public schools were tax-supported, the out-of-pocket cost to the student was far less and the costs were more favorable to the value of the training.

- Twenty-seven percent of all graduates changed jobs. Most job job changers were white males who had gone to proprietary schools and were working as clerks and accountants. They changed jobs to increase their earnings, although none of the proprietary clerks (or the public job changers) advanced into accountant jobs.

- Proprietary graduates gained significantly ($p<.036$) more earnings from changing jobs than public graduates.

- Public and proprietary graduates' first earnings on their current jobs were similar, even though public graduates were not placed as accountants as often as proprietary graduates, and even though ethnic minorities and women were represented more heavily in the public sample.

- Final earnings were not significantly different, although public graduates earned a little more. The reason for the significant difference between public and proprietary graduates' final earnings on the first job, but not on the current job, lay with the third of the proprietary sample that changed jobs. Their moves increased their earnings and decreased the gap.

- There was no difference between the ego levels of the public and proprietary graduates and we concluded no major difference existed between the two in personal growth. Graduates of public schools returned to school and read more school- and work-related books. Most of those were males in low-status, unrelated jobs which indicates they were still trying to better themselves through more schooling.

- There were no significant differences between public and proprietary graduates' educational or future salary expectations.

- None of the institutional characteristics we studied were related to public graduates' performance after school. However, proprietary graduates who earned most on their first jobs had gone to middle-size schools with relatively older teachers who had light teaching loads. While the association with teachers' pay was a little mixed, the evidence suggests that more successful students went to schools where teachers were paid more.

- After analyzing major training costs, we found that total costs to the public graduate were considerably less (about 54 %) than the proprietary graduate's. The programs were more intense so proprietary students did not have as much spare time to work while going to school. The other major cost difference between public and proprietary schools lay in what the student had to pay--an average of $145 for the public graduate and $2920 for for the proprietary graduate. We pointed out in Chapter 3 that most "instructional" costs in proprietary schools were half that of public schools, but the students bear that cost in the proprietary schools and the taxpayer bears it in public schools.

B. DETAILED ANALYSIS OF ACCOUNTING GRADUATES

To get our data on public and proprietary graduates in accounting, we surveyed programs that trained only accountants (U.S. Census Code 001, NORC Prestige Code 57). We specifically excluded programs that trained for other occupations such as bookkeeping, payroll clerk, office machine operator, etc.

Table 36 shows that from the original sample (all graduates that appeared to fit our description of program and graduation dates of school years 1970-71, 1972-73), eleven percent of the public and eight percent of the proprietary graduates were deleted because, on closer inspection, they fell outside our parameters or they were out of the country.

TABLE 36

DISPOSITION OF ACCOUNTING SAMPLE BY TYPE OF SCHOOL

Type of [illegible]	Original sample	Deleted	Net sample	Refused	Can't Locate	Completed	Percent Completed
[illegible]	[illegible]	[illegible]	[illegible]	2	11	147	92%
[illegible]	[illegible]	[illegible]	[illegible]	9	15	153	86%

Of the net sample, NORC completed interviews with 92 percent of the public graduates and 86 percent of the proprietaries. (See Appendix I for a discussion of NORC's field methods.)

Thirty-eight percent of the 1973 proprietary graduating class was made up of ethnic minorities. However, ethnic minorities comprised only about 21 percent of the entire sample of graduates we contacted (which included 1971 as well as 1973 graduates). Two factors could explain this apparent underrepresentation of ethnic minorities in the entire sample. First, proprietary schools may have intensified their recruiting efforts among ethnic minorities recently and our

sample, which included earlier graduating classes, would not have the same proportion of minority students as later classes. Second, ethnic minorities move frequently for financial or other reasons, so we couldn't locate many of them. Table 37 shows the labor market activity of the accounting graduates.

TABLE 37

DISTRIBUTION OF ACCOUNTING GRADUATES BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

Distribution	Public	Proprietary
Unemployed--never had a full-time job	36	18
Working part-time	4	2
Working full-time	102	116
Total*	142	136

*These do not total 295 because 17 cases whose jobs fell outside the major categories were deleted from the analysis.

We arrayed the first job of all 218 graduates who reported having been employed on the grid and grouped the jobs as follows:

1) Males whose first job was subclerical and below the NORC prestige rating of 39 fell into the first category. We considered a job that fell into this category unrelated to training for accounting and, therefore, gave it the lowest ranking.

2) Female clerks whose jobs had NORC prestige ratings of 23 to 50 fell into the second category. The earnings of this group were often below earnings of Group 1 due to sex differences (women earned less) in spite of a higher place in the occupational hierarchy.

3) Males whose first job was clerical with NORC prestige ratings of 23 to 50 fell into the third category. We placed them ahead of female clerks because their earnings were higher (men earn more).

4) Males whose first job was in accounting, or in the professional, managerial, or sales categories, with an NORC prestige rating up to 72, fell into the fourth category. Only three females were in this top group and they were deleted from the analysis. Table 38 shows the distribution of graduates in these first job categories.

TABLE 38

DISTRIBUTION OF ACCOUNTING GRADUATES BY FIRST JOB AFTER GRADUATION
(in percents)

Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
1	2	3	4
18 (39)	30 (66)	36 (79)	16 (34)

As a check, we tested how this breakdown related to a graduate's first weekly earnings on his first job, controlling for job tenure, age, and region. The results are shown in Table 39.

TABLE 3.

ACCOUNTING GRADUATES' FIRST WEEKLY EARNINGS BY TYPE OF JOB
(controlling for respondents' job tenure, age, and region)

Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
1	2	3	4
$91.75 (38)	$91.90 (67)	$110 (79)	$130.50 (34)

Job type is significantly associated with first earnings on first job ($p<.001$). Males in unrelated jobs earned least and males in accounting or related jobs earned most, which gave us confidence in our occupational groupings on the grid.

Before testing our hypothesis--which graduates do better in the labor market--we needed to answer two questions: Were there significant differences in the backgrounds of public and proprietary accounting graduates for which we must control? Were graduates' characteristics significantly associated with the level of their first job? We needed this information so we could control for preexisting background differences that could affect success in the labor market.

Table 40 shows that the age and ethnic background of the public and proprietary graduates were significantly different. The public sample included more ethnic minorities (39%) and the proprietary sample included fewer (16%). Public graduates were younger (21 years old on the average) than the proprietary graduates who averaged 22 1/2 years. While a person's ethnic background was not associated with the kind of job he got after graduation, it was related to his earnings, as we will show later. Age, however, was related to a person's first job. Those who were older got the higher level jobs that paid more and those who were younger got the lower level jobs that paid less.

Because ethnic background and earnings do not always operate in the same way, and because ethnic background is only a two-level variable, we did not control for it statistically. Instead, we have [illegible] earnings and other data for each ethnic group.

ACCOUNTING GRADUATES' BACKGROUND CHARACTERISTICS
BY TYPE OF SCHOOL AND TYPE OF JOB

Background characteristic	Are background characteristics different between public and proprietary graduates?	Are background characteristics significantly associated with level of first job?
Marital status	No	No
Father's occupation	No	No
Educational status	No	No
High school grades	No	No
Age	Yes*	Yes**
Ethnic background	Yes**	No

*
**

But, age and type of job and earnings did operate in the same way consistently, so we controlled for age differences between the public and proprietary samples when looking at earnings.

If older people such as veterans or people who had full-time jobs while they were in school were over-represented in one type of school, the earnings of graduates of that type of school might be biased upward. We inspected these cases and found that veterans comprised 22 percent of the accounting sample, were evenly distributed between public and proprietary schools, and held jobs similar to other respondents in the sample. Twenty-eight percent had full-time jobs while in school, and there were no significant differences in earnings between the public and proprietary graduates of this subgroup. However, because they were more heavily represented in the public school sample at the ratio, we controlled for job tenure as well as age in all earnings analyses.

1. Careers of Accounting Graduates.

a. First Job

There was a significant difference in the time it took public and proprietary graduates to get their first job after school ($p<.045$). Public graduates found their first jobs in less than one month while proprietary graduates took slightly more than one month. However, when we controlled for earnings while in school to identify those who may have kept the same jobs after graduating, the difference became not significant although the trend remained.

Kind of First Job: Table 41 shows the distribution of public and proprietary accounting graduates across four types of jobs. A Chi-square test revealed a significant trend for proprietary graduates to get higher level jobs than public graduates.

TABLE 41

DISTRIBUTION OF ACCOUNTING GRADUATES BY TYPE OF FIRST JOB AND TYPE OF SCHOOL[1]

Type of School	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
Public	[illegible]	[illegible] (34)	[illegible]	[illegible] (10)
Proprietary	[illegible]	[illegible]	43 [illegible]	[illegible] (24)

[1] [illegible]

Ethnic minorities who were more heavily concentrated in the public sample fared somewhat better than their proprietary counterparts, as Table 42 indicates.

TABLE 42

DISTRIBUTION OF ETHNIC MINORITY ACCOUNTING GRADUATES AS PERCENT OF TOTAL ACCOUNTING GRADUATES, BY TYPE OF FIRST JOB AND TYPE OF SCHOOL[1]

Type of school	Males in ac-related jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
Public	32 (93)	31 (123)	48 (14)	45% (5)
Proprietary	[illegible]	31 (93)	10 5	20% (5)

[illegible] instance, 45% of the public graduates who got accounting or related [illegible] were ethnic minorities.

Self-reported Relationship of First Job to Training: Overall, there was a significant relationship ($p<.01$) between job type classification and the graduates' self-reported job relatedness. The graduates' self report confirmed our job classification. (See Table 43). However, we should point out a consistent and significant ($p<.013$) pattern for more proprietary graduates to report their jobs were unrelated to their training. These proprietary graduates had the same [illegible] as public school graduates who were not as likely to say that their jobs were related to training.

TABLE 43

ACCOUNTING GRADUATES WHO REPORTED THEIR FIRST JOB WAS RELATED TO THEIR TRAINING, BY TYPE OF JOB AND TYPE OF SCHOOL
(in percents)

Type of School	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
Public	15% (25)	60% (39)	51% (29)	63% (11)
Proprietary	5% (14)	90% (29)	83% (50)	80% (25)

We offer two plausible explanations for this finding:

- The average proprietary graduate paid $2,933 for his or her course of study and spent an average of 16 months pursuing it, but only two out of ten graduates were actually employed as accountants after graduation. Judging from their earnings of about $130 per week, those who earned the most were in junior accountant positions. One explanation for proprietary students' optimistic view of their job situation lies in Festinger's (1957) paper that reported when a person's

expectations are not met, a dissonance between their expectations and reality arises. One way of minimizing the dissonance is lowering expectations. This may explain why most men and women who graduated from proprietary schools and became clerks still claimed the training was related to their work.

- Belitsky (1969) observed that some proprietary schools' curricula are like a career ladder where students, depending on their ability and motivation, can get off at various levels and go to work. For example, a school might aim at training and placing graduates as accountants, but less able students could opt out with a certificate at lower levels--perhaps as bookkeepers or payroll clerks. If this had happened in our sample, we should have found graduates with lower achievement motivation, educational status, and socioeconomic status in lower level jobs. However, we found no relationship between these background characteristics and the type of jobs the graduates got, and feel this explanation is not plausible.

- Finally, proprietary school graduates may have had lower expectations than their public counterparts and may have perceived that their training was indeed related to their jobs.

The effect is significant ($p<.05$) even though the number is small.

First Earnings on First Job: Of the accounting sample, 57 percent graduated in 1970-71 and 61 percent graduated in the 1972-73 school year. To adjust for labor market differences and inflation that might have affected earnings, we controlled for respondents' age which had already proven an important background variable. We also controlled for job tenure which we discussed earlier. Controlling for age and job tenure also corrected for different graduation dates. We also controlled for region to adjust for cost-of-living differences between the four regions.

Table 44 shows a person's job type was significantly associated ($p<.001$) with his or her first earnings. Those who got jobs for which they were trained earned the most--$130.50 per week on the average. Male clerks earned $110 per week and female clerks $91.90 per week - about 16 percent less than their male counterparts. Males in low-level, unrelated jobs earned the least.

There was a nonsignificant trend for whites to earn a little more than other ethnicities. There was also a nonsignificant trend for private, accounting graduates to earn slightly more. That is, however, had fewer ethnic minorities and a higher proportion of their graduates found accounting-related jobs.

TABLE 44

ADJUSTED GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS
BY TYPE OF JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of Job	Males in job related to training	Females in job related to training	Males in job not related to training	Males in accounting and related jobs	Is the relationship significant?
First Earnings (age, region, job tenure)	$[illegible]	$[illegible]	$[illegible]	$[illegible]	Yes*
Last Earnings (age, region, job tenure)	$[illegible]	$[illegible]	$[illegible]	$[illegible]	Yes*
Change in Earnings (age, region, job tenure)	$[illegible]	$[illegible]	$[illegible]	$[illegible]	Yes*

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$[illegible]	$[illegible]	No
Last Earnings (age, region, job tenure	$[illegible]	$[illegible]	Yes**
Change in Earnings (age, region, job tenure, and first earnings)	$[illegible]	$[illegible]	Yes*

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure	$[illegible]	$[illegible]	No
Last Earnings (age, region, job tenure	$[illegible]	$[illegible]	Yes***
Change in Earnings	$[illegible]	$[illegible]	Yes*

*p < .05
**p < .01
***p < .001

Last Earnings on First Job: Of all employed graduates, 73 percent had only one full-time job. The figures reported here represent a person's last earnings on the first job or earnings as of February, 1974, when the survey was made. Table 44 shows the last weekly salaries for each type of job.

Final weekly earnings were significantly associated with type of job ($p<.001$), with those in accounting and related jobs earning the most. Other ethnicities earned significantly ($p<.003$) more ($135 per week) than Whites ($131 per week). There was a significant difference ($p<.006$) between public and proprietary graduates, with the public graduates earning $139 per week and proprietary graduates $125 per week.

Changes in Earnings on First Job: If the accounting graduates had all started their first jobs earning the same and had worked the same length of time, which groups would gain the most in earnings regardless of differences in age and region? Table 44 shows that a respondent's type of job was significantly ($p<.001$) associated with earnings changes--males in unrelated jobs gained the most, male clerks next, males in accounting and related jobs next, and female clerks gained the least. Other ethnicities gained significantly ($p<.001$) more than Whites. Finally, graduates of public programs increased their earnings significantly more ($p<.001$) than graduates of proprietary programs.

As we have seen, public graduates started out on their first jobs earning a little less than the proprietary graduates, but their final earnings were significantly greater. After controlling for first earnings, age, region, and job tenure, the public graduates gained $33.25 per week against the proprietary graduates' $21 per week. The public graduates overtook the proprietary graduates on their first job for three reasons:

1) When we analyzed earnings on the first job by type of job and type of school, we found no interaction between type of job and type of school which confirmed that the weekly earnings progression for each type of job was the same for public and proprietary graduates. The males in unrelated jobs gained the most ($34.25 per week) and the majority of them (64%) were from public schools, increasing the change in earnings for the public sample.

2) Other ethnicities gained more in weekly salaries than Whites ($8.50 per week more) and they were more heavily represented in the public sample (38% vs. 16%). Twenty-one percent of the ethnic minorities from public schools were males in unrelated jobs--the group experiencing the highest earnings gain.

3) After controlling for job tenure and age, public graduates got significantly ($p<.001$) more promotions. Chart 3 shows those results and the relationship of promotions to earnings.

Promotions clearly carried increased earnings with them ($p<.001$) and public graduates got more of both.

b. Job Changers

One-third of the proprietary accounting graduates who got full-time jobs after graduation (41) changed jobs. Only 16 percent (17) of the employed public graduates changed jobs. The public graduates who changed were fairly evenly distributed across the four job types. However, the proprietary job changers fell mostly in the male clerk and accountant categories. Of the male clerks, 34 percent changed jobs but none advanced into an accounting job. Of the proprietary males in accounting and related jobs, 42 percent changed jobs.

Did public and proprietary graduates change jobs to get higher salaries elsewhere? Yes. The average increase in salaries (first salary on new job minus last salary on old job, controlling for age, region, and last salary on old job) for the 58 people who changed jobs was $20.75 per week. There was no significant difference between the public and proprietary graduates on average increase in salary.

Of the job changers, those in jobs for which they were trained still earned the most initially, and female clerks the least. The association between type of job and earnings was significant ($p<.009$) and there was no significant difference between public and proprietary graduates' initial salaries on their new jobs. Nor was there a significant difference between public and proprietary graduates' final earnings on their new jobs.

However, if we hold first earnings on new jobs constant (because those who earn more normally gain more) and ask who gained the most in salaries between first and last earnings on their new jobs (controlling for age, job tenure, and region), we find:

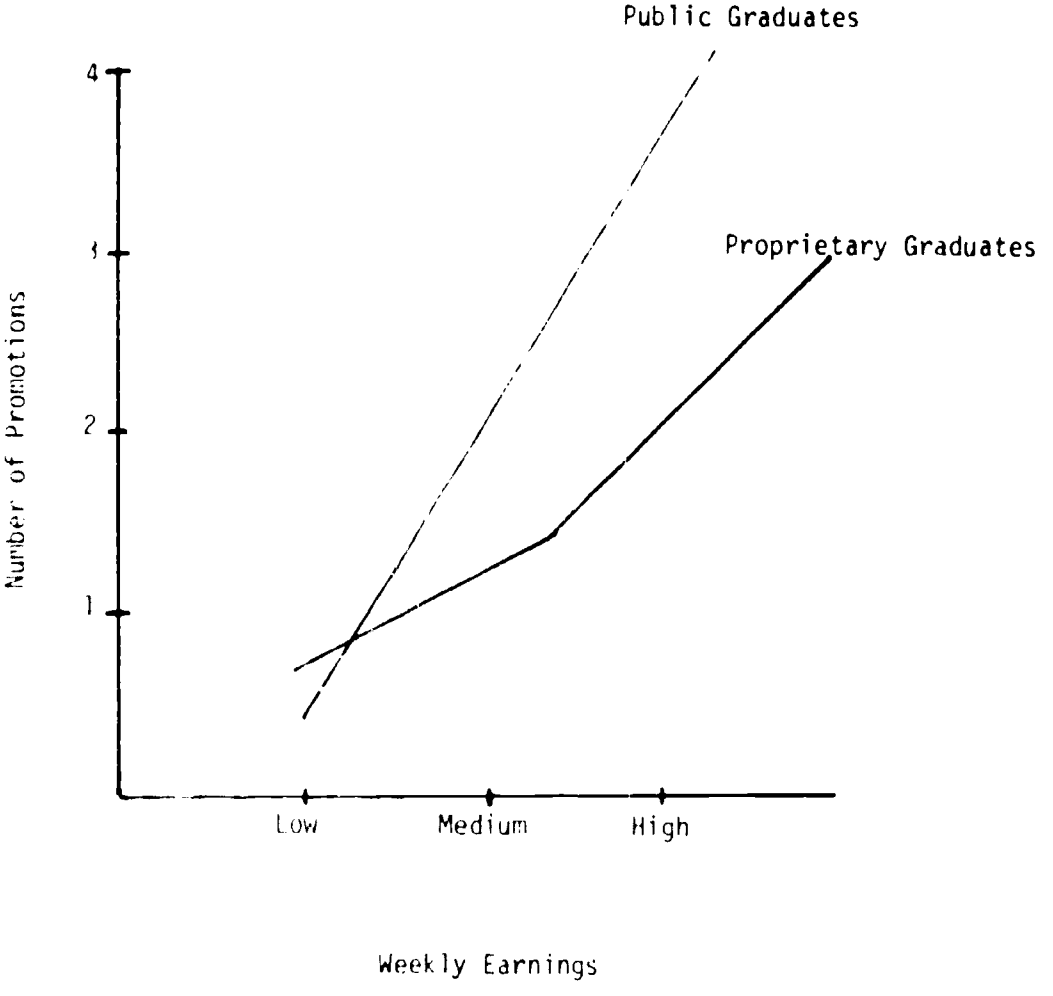
1) Whites who changed jobs gained about $13 per week and other ethnicities lost about $1 per week, significant at the $p<.029$ level.

2) Public accounting graduates who changed jobs lost about $3 per week but proprietary graduates who changed gained $16 per week, significant at the $p<.036$ level.

We concluded that those who changed jobs were mainly white males from proprietary schools who were initially employed as clerks

CHART 3

PROMOTIONS BY FINAL WEEKLY EARNINGS ON FIRST OR CURRENT JOB FOR PUBLIC AND PROPRIETARY GRADUATES
(controlling for respondents' job tenure and age)



and accountants and they changed jobs to increase their earnings, although none of the clerks advanced to professional level jobs.

c. The Sample as a Whole

We began the occupational analysis of the accounting graduates by taking the sample apart and looking at the pieces--graduates' first jobs only and a smaller number of graduates who went on to two or more jobs. We later focused the analysis on the job the graduate had at the time the survey was taken, whether it was a first or subsequent job. We needed to look at what was producing the differences, or lack of them, before we could test our central hypothesis.

We know there was a significant trend for graduates of proprietary schools to get jobs in accounting or related fields more often than similar graduates from public programs. We also know that, once a graduate took a job, he did not move quickly up to a higher-status or training-related category, although he might have changed jobs to earn more.

First Earnings on Current Job: After controlling for age and region, a person's type of job was significantly related to initial earnings ($p<.001$). Males in unrelated jobs earned an average of $104.50 per week, female clerks $99 per week, male clerks $116.75 per week, and males in accounting and related jobs, $142 per week. There was a nonsignificant trend for Whites to earn more, and both public and proprietary graduates averaged about $113.50 per week.

Final Earnings on Current Job: When the survey was taken, graduates in higher level jobs were still earning significantly more than graduates in lower level or unrelated jobs. Whites were earning significantly more ($p<.008$) than other ethnicities ($138.75 vs. $135.50 per week). Even though more proprietary graduates were placed in accounting and related jobs initially and the proprietary sample included fewer ethnic minorities who depressed earnings, proprietary accounting graduates did not earn more than their public counterparts after controlling for age, job tenure, and region in their current jobs. In fact, although the difference was not significant, the proprietary graduates earned $135.50 per week and the public graduates $141.60 per week--or $6 per week less.

Changes in Earnings on Current Job: When we asked, "If everyone were the same age, started out making the same, and had the same job tenure, and we controlled for regional effects, which groups increased their earnings the most?, we found the results displayed in Table 45.

Table 45 shows a significant ($p<.001$) association in which male clerks gained the most, males in accounting or related jobs, next most, males in unrelated jobs, next, and female clerks, the least.

TABLE 45

ACCOUNTING GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON CURRENT JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of job	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs	Is the relationship significant?
First Earnings (age, region, job tenure)	$104.50	$99	$116.75	$142	Yes**
Last Earnings (age, region, job tenure)	$126.50	$116.65	$151.50	$163.75	Yes**
Change in Earnings (age, region, job tenure, and first earnings)	$16.25	$15.25	$34.50	$31.00	Yes**

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$116	$109	No
Last Earnings (age, region, job tenure)	$138.75	$135.50	Yes*
Change in Earnings (age, region, job tenure, and first earnings)	$25.50	$22.25	Yes**

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure)	$113.50	$113.50	No
Last Earnings (age, region, job tenure)	$141.60	$135.50	No
Change in Earnings (age, region, job tenure, and first earnings)	$25.75	$23.75	No

*
**

Within that grouping, Whites gained significantly more ($p<.001$) ($3.25 per week) and there was a nonsignificant trend for public graduates to gain more in weekly earnings ($2 per week).

Public graduates had significantly greater change in earnings over the proprietary graduates on their first jobs. When we analyzed current job experiences, we found the difference still there but not significant. It had been weakened by the third of the proprietary graduates (white male clerks and accountants) who had shifted out of their first jobs into jobs where they got higher weekly salaries, which reduced the earnings gap.

Unemployment: Of the 295 graduates, 54 (or 19%) never had a full-time job. Seventy-five percent of them were older men, mostly white, from public programs, who had gone back to school significantly ($p<.039$) more often than their proprietary counterparts.

However, our major focus on unemployment was with the group that was working but was still occasionally unemployed and looking for work. Incidence of unemployment fell evenly across ethnic groups and job types, but proprietary graduates were unemployed and looking for work significantly ($p<.001$) more times (1.51) than public graduates (1.25 times). When we analyzed the length of unemployment for each incidence of unemployment, we found no difference for public and proprietary graduates. Those in higher level jobs had significantly ($p<.027$) shorter stretches of unemployment, as shown in Table 46. This finding suggests the importance of finding a job related to training.

TABLE 46

TIME UNEMPLOYED AND LOOKING FOR WORK BY TYPE OF CURRENT JOB
(controlling for respondents' age, number of times unemployed and job tenure)

Males in job-related jobs	Female clerks	Male clerks	Males in accounting or related jobs
1	2	3	4
5 mos. 19 days	3 mos. 12 days	2 mos. 3 days	1 month 29 days

2. Nonoccupational Experiences of Accounting Graduates.

Personal Growth: We used Loevinger's (1970) ego development scale to measure differences in personal growth between the public and proprietary graduates and found no significant differences.

Table 47 summarizes the responses of the accounting graduates on additional measures of personal growth. Public graduates read more books than graduates of proprietary schools. Most reading was focused on school- or work-related books. Among those who said they had read more than one book in the last three months, there was a significant trend for other ethnicities to have read more than Whites--over 5 1/2 books to the Whites' 3 1/2 books. There was also a nonsignificant trend for males in unrelated jobs to read the most--5 1/2 books.

Public graduates also enrolled for additional schooling significantly more often ($p<.00.$), particularly men in low status, unrelated jobs. There were no significant ethnic differences among those who enrolled for more school. Eighty-three percent of the graduates who enrolled for more education reported that it was occupationally related.

Table 47

RESPONSES OF ACCOUNTING GRADUATES BY TYPE OF SCHOOL
(in percents)

Responses	Public	Proprietary	Is the relationship significant?
Those reporting reading at least one book in last 3 months	75	61	Yes*
Those reporting having enrolled for further schooling	66	44	Yes***
Those reporting having acted in ways [illegible]	76	62	Yes**

*p
**
***

Our measures of personal growth, in the absence of ego development differences, indicate that the public accounting graduates who got low status jobs were still trying to better themselves by taking more work-related schooling, particularly males in low status, unrelated jobs.

With no other measure to help explain it, we can only speculate about the finding that public graduates voted more often in the last presidential election.

Expectations: The graduates were asked about their salary and educational expectations. Salary expectations were significantly ($p<.001$) associated with the type of job the respondent had and the amount of money he or she was making--those making more expected more. There were no significant differences between the public and proprietary graduates.

A respondent's type of job and degree expectations were significantly associated ($p<.001$). Eighty-eight percent of the respondents in the lowest status jobs (except for female clerks) expected to get a(nother) degree in the future, but as job type and status increased, the number of graduates expecting to get higher degrees decreased. There was no difference between public and proprietary graduates.

We asked respondents what degree they expected to get and found a significant trend ($p<.009$) for people in lower status jobs to expect a lower level degree. Since educational status was evenly distributed across the four job types, these expectations probably reflected peer associations on the job--people in low status jobs most likely associate with people with lower educational expectations.

Perceptions of the Adequacy of Training: We asked each graduate to rate the adequacy of accounting training from very bad to excellent. There was no relationship between a person's type of job and his rating on adequacy of training. The absence of that association suggests that people in the lower status jobs felt they were to blame for not getting jobs related to their training, not the school. Public graduates felt their training was significantly ($p<.013$) more adequate than the proprietary graduates'. There were no differences by ethnic background.

Satisfaction

a. Satisfaction with Earnings: Those accounting graduates who were in higher-level jobs and earning more reported significantly ($p<.012$) greater satisfaction with their earnings than those in lower-level jobs. Males in accounting and related jobs reported an earnings satisfaction score of 1.76 (between very and somewhat satisfied); male clerks 2.05; female clerks 2.05 (somewhat satisfied); and males in

unrelated, low level jobs 2.41 (between somewhat satisfied and somewhat dissatisfied). Whites were significantly ($p<.035$) more satisfied than other ethnicities (Whites = 1.99, other ethnicities = 2.21--see key on Table 48) and, although there were more people of other ethnicities in the public sample, public graduates were significantly more satisfied with their earnings than proprietary graduates ($p<.05$). However, as Table 48 shows, there was a slight reversal (or interaction) between public and proprietary graduates and type of job. The trend was clear. Males in accounting and related jobs from public programs were less satisfied with their earnings than male clerks, but because they numbered only eleven, we have disregarded it.

TABLE 48

[illegible] GRADUATES' SATISFACTION WITH EARNINGS BY TYPE OF JOB AND TYPE OF SCHOOL

[illegible]	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
[illegible]	[illegible]	2.1 [illegible])	1.93 (26)	2.0 (11)
Proprietary	3.14 [illegible]	2.12 (26)	2.16 (49)	1.65 (23)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

b. Satisfaction with Work Itself: Satisfaction with the job was significantly related ($p<.001$) to the kind of job a person held, with those in the most related feeling the most satisfied. Males in accounting and related jobs reported satisfaction scores of 1.35, male clerks 1.72, female clerks 1.69, and males in unrelated jobs 2.26. Again, Whites were significantly ($p<.007$) more satisfied (1.64) than other ethnicities (1.93). Even though the public sample had more respondents of other ethnicities, the public graduates were significantly ($p<.044$) more satisfied with their jobs than the proprietary graduates. See Table 49.

TABLE 49

ACCOUNTING GRADUATES' SATISFACTION WITH THE JOB BY TYPE OF TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
Public	2.0 (20)	1.56 (31)	1.73 (26)	1.55 (11)
Proprietary	3.0 (7)	1.85 (26)	1.71 (49)	1.30 (23)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

c. Satisfaction Overall: The relationship between a person's job and overall feelings of satisfaction were still significantly ($p < .001$), related--those in jobs for which they were trained were the most satisfied. Because of a stronger tendency for ethnic minorities, who were more heavily represented in the public sample, to feel less satisfied overall than Whites ($p < .002$), the gap in satisfaction between the public and proprietary graduates was no longer significant. (See Table 50.)

TABLE 50

ACCOUNTING GRADUATES' SATISFACTION OVERALL BY TYPE OF JOB AND TYPE OF SCHOOL

Type of school	Males in unrelated jobs	Female clerks	Male clerks	Males in accounting or related jobs
	1	2	3	4
Public	2.15 (20)	1.64 (31)	1.81 (36)	1.[illegible] (11)
Proprietary	2.29 (7)	1.62 (26)	1.66 (49)	1.35 (23)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

We asked each graduate if he or she would choose the same school again if they had it to do over. The responses did not vary significantly according to a person's job or ethnic background. However, there was a significant ($p < .001$) difference between the public and proprietary graduates. Thirty-two percent of the proprietary graduates said they would choose a different school and twelve percent of the public said they would.

3. Relationship of Institutional Characteristics to Graduates' First Earnings.

In Chapter 3 we discussed some major institutional differences between public and proprietary programs and within proprietary programs. One major difference in institutional characteristics of public and proprietary schools was the average public school graduate went to school for 17 months and paid an average of $144.50 for his or her course. The average proprietary graduate spent 16 months in school and paid $2,933.

In analyzing the data, we tested to see if institutional characteristics were associated with differences in the accounting graduates' first earnings. Public schools' characteristics were not significantly associated with the earnings of their graduates, so the following report describes only proprietary schools and their graduates.

Teaching Load: As Table 51 shows, the average number of hours a teacher spent in the classroom each week was significantly related ($p<.001$) to how well graduates did in terms of earnings. Those students who earned the most went to schools where the average teaching load was the lowest and students who earned the least went to schools where the average teaching load was the highest.

TABLE 51

'ROPRIETARY ACCOUNTING GRADUATES' FIRST WEEKLY EARNINGS
BY TEACHERS' AVERAGE WEEKLY TEACHING LOAD
(controlling for respondents' age, region, and earnings while in school)

Average weekly teaching load	Proprietary graduates' first weekly earnings
Low (up to 15 hours per week)	$124
Medium (16-18 hours per week)	$108.50
High (19-25 hours per week)	$ 94

Average Annual Salary: Proprietary teachers' average annual salaries were also significantly associated with graduates' salaries ($p \leq .018$) but, as Table 52 shows, the relationship was not as clear as in the preceding table. Table 52 shows that graduates of schools where teachers were paid the least and the most, earned the most. Graduates of schools where teachers were paid medium wages earned the least. Chapter 3 indicated a strong inverse correlation between teachers' salaries and teaching load--the more teachers were paid, the less they taught--so we would expect the data in Table 51 and Table 52 to work in the same direction.

TABLE 52

PROPRIETARY ACCOUNTING GRADUATES' FIRST WEEKLY EARNINGS BY TEACHERS' AVERAGE ANNUAL SALARIES
(controlling for respondents' age, region, and earnings while in school)

Average teacher salary	Proprietary graduates' first weekly earnings
Low (up to $9000)	$126.50
Medium ($9001-12000)	$ 95.50
High ($12000 +)	$126.50

Before controlling for region, age, and earnings, the effect was strong and operated in the expected direction--graduates who earned more went to schools where teachers were paid more. However, when the covariates were entered, the trend became mixed. Because the proprietary school sample was small and lacked variation, it may have been more subject to confounding.

Teachers' age: Teachers' age and graduates' first earnings were significantly related, as Table 53 shows. Graduates who went to schools where the average teacher age was 32 years or less earned significantly less ($p \leq .013$). Graduates of schools where the teachers' average was 36-plus earned more.

TABLE 53

PROPRIETARY ACCOUNTING SCHOOL GRADUATES' FIRST WEEKLY EARNINGS BY TEACHERS' AGE
(controlling for respondents' age, region, and earnings while in school)

Average teacher age	Proprietary graduates' first weekly earnings
32 years or less	$106
36 years or more	$125

Size of School: The size of the school a graduate attended was significantly associated with his or her first earnings ($p < .018$). As Table 54 shows, those in middle-sized schools earned the most and those from large schools--286 and over--earned least. There were no significant associations between graduates' earnings and program cost, accreditation status, or length of training. Proprietary graduates went to school an average of 16 months and public school graduates

TABLE 54

PROPRIETARY ACCOUNTING GRADUATES' FIRST WEEKLY EARNINGS BY AVERAGE SCHOOL SIZE
(controlling for respondents' age, region, and earnings while in school)

School size	Proprietary graduates' first weekly earnings
41-250	$119.75
251-285	$125.75
286+	$100.50

17 months. However, there was a significant trend for ethnic minorities to attend unaccredited schools, but they earned as much as those who went to accredited schools.

4. Costs to the Student.

We calculated the costs to the student in Table 55. The cost of training was about $4,095 more to the proprietary student, or 1.84 times the public student cost.

TABLE 55

COSTS TO THE STUDENT OF ACCOUNTING TRAINING BY TYPE OF SCHOOL

	Public	Proprietary
Potential earnings (unadjusted weekly earnings less 10 X weeks in school)	$6662	$6703
-less-		
Earnings while in school (unadjusted weekly earnings X weeks in school)	-1937	- 671
-equals-		
Foregone earnings	$4725	$6032
-plus-		
Program charges to student	+ 145	+2933
-equals-		
Total costs to the student	$4870	$8965

The public sample included more women and ethnic minorities who earned less than the average on their first jobs. If we considered this factor, we would probably find the difference between the public and proprietary student costs would widen even more.

The proprietary graduate's costs were higher for three reasons:

1) Proprietary accounting programs were almost as long as public accounting programs (16 compared with 17 months), unlike many other proprietary programs, keeping all students out of the labor market for almost the same time. While the average public program lasted 17 months, most students actually took two school years (21 months) to finish. Because some proprietary accounting schools operated that way too, we ignored that distinction.

2) Proprietary students earned significantly less ($p<.001$) than public students while in school, either because the proprietary students were worth less in the labor market prior to training or because their programs were more intense, keeping them from working more. We think that it is because of the intensity of the program, based on our earlier finding that a full-time program in most proprietary schools exceeds 25-30 hours of in-school time each week. A full-time program in most public schools involves only about 15 hours per week of actual classroom time. (Wilms, 1973, p.73)

3) Proprietary schools' program charge to the student is much greater--an average of $2,933 compared to an average of $145, or more than 20 times the public charge. The public schools charged virtually nothing because they were subsidized by taxes. If this subsidy were known and put into the cost analysis, the costs would probably be about the same.

Nevertheless, from the student's economic view, going to a public school was clearly less costly.

II. Programmers' Experiences after School

A. SUMMARY

Our hypothesis was not confirmed on programming graduates. Public programs lasted an average of 18 months. Proprietary programs lasted an average of 11 months and cost the graduate an average of $2344. Although ethnic minorities were more heavily represented in the proprietary sample, they fared significantly ($p < .025$) better on placement if they went to public school. We could not survey 48 foreign proprietary graduates who had left the country.

Our data also showed that:

- Public and proprietary programming schools placed a scant 24 percent of their graduates in programming jobs, but public school graduates got significantly ($p < .001$) better jobs.

- Public graduates' first and last earnings on their first jobs were slightly higher than proprietary graduates', but the difference was not significant.

- Females gained only 56 percent of what their male counterparts did in similar jobs. We compared male and female clerks' gains in first-job earnings (assuming they all started out making the same).

- On the sample as a whole (those on their current jobs*), public graduates earned a little more at first, but in the long run the differences in earnings were not significant.

- Ninety percent of the public graduates and 49 percent of the proprietary graduates said they would choose the same school all over again.

- Overall, public graduates were more satisfied with their work ($p < .038$). The proprietary satisfaction scores were depressed somewhat by a larger number of ethnic minorities who tended to be less satisfied than their white counterparts.

- Public graduates were a little (but not significantly) more satisfied with their earnings, but significantly ($p < .001$) more satisfied with the kind of work they were doing.

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*Some people in the sample were still at their first job. Some had changed jobs.

- There was a significant ($p < .002$) difference in how public and proprietary graduates perceived the adequacy of their training. Public graduates, both those who got jobs related to their training and those in unrelated jobs, evaluated their training as more appropriate than proprietary students.

- The proprietary students' total training costs were 1.65 times the public students . We concluded the proprietary graduate's lower evaluation on the adequacy of his training and the lower satisfaction he felt overall were related to the substantial price he paid. The public graduate whose training was subsidized by taxes paid less, evaluated his training higher, and felt more satisfied overall.

- Sixty-eight percent of the proprietary and 57 percent of the public graduates who reported full-time employment had had only one job since graduation. The graduates' first jobs were significantly related ($p < .001$) to their first earnings, with those who worked as programmers and other related jobs earning the most, followed by males in unrelated jobs, male clerks, and female clerks.

- About a third of both public and proprietary graduates changed jobs, and almost as many lost job status as gained. Unexpectecly, our evidence did not show that a significant number of males employed as computer operators (in the male clerical group) advanced into the higher status programming jobs.

- Public school graduates gained significantly more in initial earnings by changing jobs, but the gap in earnings between the public and proprietary sample was closed by the increased earnings of males (most of whom were from proprietary schools) in unrelated jobs.

- Ninety percent of the public and 93 percent of the proprietary graduates reported working full time after graduation. Proprietary graduates reporting full-time employment were unemployed more often ($p < .004$) and stayed unemployed longer ($p < .035$) than public graduates.

- There was a not quite significant trend, similar to the one reported in the accounting study, for those in related jobs to be unemployed for shorter periods. This finding underscored the importance of a student's getting a job for which he trained.

- Public graduates reported returning to school significantly more often for occupationally related instruction than proprietary graduates. However, we found no evidence of differences in personal growth or graduates' educational [illegible] expectations.

- There was no relationship between institutional characteristics and the graduates' performance in the labor market, due largely to the small school sample and consequent lack of variability.

- Graduates' high school grade-point average and type of job and earnings were significantly ($p < .001$) related, a totally unanticipated but interesting finding our analysis turned up. Those who had the lowest high school grades got the best jobs and earned the most; those with the highest high school grades got low-level jobs and earned the least.

B. DETAILED ANALYSIS OF PROGRAMMING GRADUATES

We surveyed graduates of public and proprietary programs that trained only data processing programmers (U.S. Census Code 003, NORC Prestige Code 51). We specifically excluded programs for systems analysts, computer operators, and keypunchers.

Table 5.6 shows that we deleted 12 public and 51 proprietary respondents from the original samples. A few respondents had graduated from a program that did not fit our description, but most (48 of the proprietary respondents deleted) were dropped because they were foreign students who had returned to homelands from Panama to Pakistan.

TABLE 5.6

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NORC completed interviews with 90 percent of the public and 84 percent of the proprietary graduates living in the country. Nineteen percent of the public graduating class and 20 percent of those interviewed after graduation were ethnic minorities. Eighty-five percent of the proprietary graduating class were ethnic minorities, but only 58 percent of the proprietary graduates interviewed were. The 47 foreign students who left the country account for the underrepresentation of minorities in the proprietary sample.

Table 57 shows that ten percent of the public and seven percent of the proprietary samples were unemployed when the survey was made.

TABLE 57

DISTRIBUTION OF PROGRAMING GRADUATES BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

	Public	Proprietary
Unemployed (never had a full-time job)	14	9
Working part-time	4	3
Working full-time	115	97
Total	133	109

The first jobs the graduates had after school were categorized four ways:

1) Males in unrelated, low-status jobs. After graduation, 40 men were first employed in this category that included printing pressmen, meat cutters, welders, freight handlers, laborers, and guards. The NORC prestige ratings on these jobs reached 31 (craft apprentices). Eight women who fell into this category were deleted from the analysis because of their small number.

2) Female clerks. Except for the eight women mentioned above and the 13 women who got jobs as programmers, women in the programming sample fell into this big category. Their jobs were spread through the clerical classification--clerk-typists, keypunch operators, a few computer operators, and stock clerks. NORC prestige ratings on these jobs went up to 50 (bookkeepers).

3) Male clerks. Sixty-four men found jobs as clerks, keypunch operators, computer operators, stock clerks, and bookkeepers after graduation. NORC prestige ratings on these jobs also went up to 50.

4) Males employed as programmers and at related jobs. Fifty-one men were employed as programmers, data processing specialists, managers of data processing installations, and salesmen of data processing equipment after graduation. The thirteen women who found jobs in this classification were deleted because of their small number. This top classification had a NORC rating of 69 (physical scientist).

See table 58 for the distribution of these categories.

TABLE 58

DISTRIBUTION OF PROGRAMING GRADUATES BY FIRST JOB AFTER GRADUATION
(in percents)

Males in unrelated jobs	Female clerks	Male clerks	Males in programing or related jobs
[illegible] (31)	37 (87)	30 (64)	24 (51)

When we tested the relationship of this classification to the respondents' first earnings after graduation, we found a significant ($p < .001$) relationship (after controlling for respondents' age, region, earnings while in school, and job tenure). Table 59 shows that males in programming and related jobs earned the most ($131.29 per week), and female clerks the least ($91.65 per week).

TABLE 59

PROGRAMING GRADUATES' FIRST WEEKLY EARNINGS BY TYPE OF JOB
(controlling for respondents' age, region, job tenure, earnings while in school)

Males in un related jobs	female clerks	Male clerks	Males in programing or related jobs
$[illegible] (43)	$91.65 (57)	$101.50 (64)	$129 (51)

When we investigated the relationship of graduates' background characteristics to the type of school they chose and type of job they got, we found that a respondent's age was significantly ($p < .001$) related to first job and earnings. (See Table 60.)

TABLE 60

[illegible]

	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

The oldest members of the sample were males in programming and related jobs, and males in unrelated jobs. Male clerks and female clerks were the youngest, in that order.

Thirty-eight percent of the public sample (43) and 36 percent of the proprietary sample (35) were graduates working full time while going to school. Veterans comprised 17 percent (25) of the public and 27 percent (33) of the proprietary samples. We have controlled for age and job tenure when looking at earnings because of the effect of these variables on earnings. We have noted significant associations between ethnicity and the dependent variables.

1. Careers of Programming Graduates

a. First Job

The average public graduate got his first job 26 days after graduation and the average proprietary graduate got his one month and ten days after graduation. The difference was significant ($p<.004$) after we adjusted for those who worked full time while in school and kept those jobs after graduating. Ethnic minorities got their first jobs just as quickly as Whites.

Kind of First Job. Table 61 shows the distribution of public and proprietary programming graduates across the four types of jobs. The Chi-square test showed a significant ($p<.001$) trend for public graduates to be placed in higher level jobs.

TABLE 61

[illegible] OF PROGRAMMING GRADUATES BY TYPE OF FIRST JOB AND TYPE OF SCHOOL

[illegible]	Male [illegible] related jobs	Female [illegible]	Male [illegible]	Males in programming or related jobs
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Ethnic minorities, who were more heavily represented in the proprietary sample, fared better if they graduated from a public school, as shown in table 62, below.

TABLE 62

DISTRIBUTION OF ETHNIC MINORITY PROGRAMING STUDENTS BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Males in unrelated jobs	Female clerks	Male clerks	Males in programing or related jobs
Public	0	33 (7)	24 (5)	43 (9)
Proprietary	35 (12)	32 (11)	35 (12)	18 (6)

$\chi^2 = 9.8$, 3df

Public graduates were somewhat more successful in getting jobs for which they were trained, but fewer than 2 1/2 out of ten got placed as programmers or in related jobs.

Self-reported Relationship of First Job to Training. A respondent's perception of the relatedness of his job to his training was significantly ($p<.001$) associated with the actual job he had. Twenty percent of the males in unrelated jobs, 46 percent of the female clerks, 56 percent of the male clerks, and 69 percent of the males in programming and related jobs reported their jobs were related to their training. There were no differences between the public and proprietary graduates' responses, nor was there an ethnic effect.

First Earnings on First Job. Table 63 shows that a respondent's first earnings were significantly ($p<.001$) associated with his job category. There were not significant differences between Whites and those of other ethnicities, or between public and proprietary graduates.

Last Earnings on First Job. Again, table 63 shows the same sets of relationships. Those in programming and related jobs earned the most ($158 per week) and female clerks the least ($111.50 per week). The association was significant at the p<.001 level. There were no ethnic or public/proprietary differences, although there were non-significant trends for Whites and public graduates to earn a little more.

Changes in First Job Earnings. Male clerks gained the most, followed by males in unrelated jobs, males in programming and related jobs, and female clerks. The effect was significant (p<.003). There were no significant differences between the white and ethnic minority, and public and proprietary graduates. Public and proprietary graduates won about the same number of promotions.

b. Job Changers

Thirty-two percent (37) of the public graduates changed jobs. Those who changed were evenly distributed across female clerks (30%), male clerks (30%), and males in programming and related jobs (26%). Males in unrelated jobs accounted for only 14 percent of the changers. However, only 19 percent of the changers (7) advanced into a higher job classification. Eight percent (3) went down, and most, 73 percent (27), did not change job categories at all.

Thirty-three percent (32) of the proprietary graduates changed jobs. Twenty-eight percent of the job changers (9) were males in unrelated jobs, 16 percent (5) were female clerks, 31 percent (10) were male clerks, and 25 percent (8) were males in programming and related jobs. Only 13 percent of the changers (4) advanced into a higher job classification, 18 percent (6) went down, and, like the public graduates, the majority (69%) did not change categories.

First Earnings on Second Job. Which group gained the most in beginning salaries from changing jobs? Those who made more, gained more. When we controlled for last earnings on first job, age, and region, we found a significant (p<.007) association between a person's type of job and earnings gained by changing jobs. Female clerks actually lost about $1.50 per week; male clerks gained only $13.50 per week; males in unrelated jobs gained next most at $20.75 per week; and males in programming and related jobs gained the most--$42.50 per week.

Public graduates gained $29.25 per week and proprietary graduates gained only $2.50 per week--a significant difference (p<.004). There was not a significant difference between Whites and ethnic minorities.

Table [illegible]

PROGRAMMING GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS IN FIRST JOB BY TYPE OF JOB, ETHNICITY AND TYPE [illegible]

Type of Job	Males in [illegible] related [illegible]	Female Clerks	Male Clerks	Males in programming or related jobs	Is the relationship significant?
First Earnings (age, region, job tenure and earnings while in school)	$[illegible]	$[illegible].65	$[illegible]	$1[illegible]	Yes**
Last Earnings (age, region, job tenure)	$142	$[illegible].50	$139	$15[illegible]	Yes**
Change in Earnings (age, region, job tenure and first earnings)	$2[illegible]	$22.[illegible]	$4[illegible].25	$24.50	Yes*

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure and earnings while in school)	$[illegible]	$[illegible]	No
Last Earnings (age, region, job tenure)	$142	$1[illegible].5[illegible]	No
Change in Earnings	$3[illegible]	$[illegible].5[illegible]	No

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure and earnings while in school)	[illegible]	$10[illegible]	No
Last Earnings (age, region, job tenure)	$138.5[illegible]	$13[illegible]	No
Change in Earnings (age, region, job tenure and first earnings)	$[illegible]	$[illegible]	No

* [illegible]
** [illegible]

Final Earnings on Second Job. [illegible] job category and final earnings were significantly related ($p<.001$). Surprisingly, males in unrelated jobs earned the most ($167 per week). Males in programming and related jobs earned $166.75 per week, male clerks $143 per week, and female clerks $[illegible] per week. There was a non-significant trend for public graduates to earn more than their proprietary counterparts ($17.50 per week). Ethnic minorities had similar earnings.

Public graduates started out on their second job earning significantly ($p<.002$) more than proprietary graduates, but the gain in earnings of the males in unrelated jobs (mostly from proprietary schools) tended to cancel out the gains made by public programming graduates.

c. The Sample as a Whole

The data described in this section refer to the respondents' jobs held at the time the survey was made, whether the jobs were the first or subsequent ones.

First Earnings on Current Job. As table 64 shows, there was a significant ($p<.001$) trend for males in programming and related jobs to earn the most, followed by males in unrelated jobs, male clerks, and female clerks. There were non-significant trends for Whites to earn more than other ethnicities, and public graduates to earn more than proprietary graduates.

Last Earnings on Current Job. The trends remained the same and the differences between ethnic groups and public and proprietary graduates were not significant.

Changes in Earnings on Current Job. Not surprisingly, those in programming and related jobs gained the most, followed by males in unrelated jobs (only one dollar per week less than those who got jobs as programmers), male clerks, and female clerks who gained just half as much as males in the same job category.

Whites gained a little more than ethnic minorities, but not significantly more. Public and proprietary graduates' earnings were almost exactly the same. The gap had been closed by the proprietary males in unrelated jobs who gained almost as much in earnings as those who had programming and related jobs.

Unemployment. Ten percent of the public graduates (14) and seven percent of the proprietary graduates (8) were not working full time when the survey was made. Their numbers were too small to analyze.

TABLE 4.4

PROGRAMING GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON CURRENT JOB BY TYPE OF JOB, ETHNICITY AND SEX [illegible]

Type of Job	Males, in non-related jobs	Female clerks	Male clerks	Males in programing or related job.	Is the relationship signif.cant?
First Earnings (age, region, job tenure and earnings while in school)	$[illegible]	$346	$[illegible]2	$[illegible]31	Yes,**
Last Earnings (age, region, job tenure)	$[illegible],25	$[illegible]13	$[illegible]32	$[illegible],[illegible]5	Yes**
Change in Earnings (age, region, job tenure and first earnings)	$[illegible],67	$15	$[illegible],75	$2[illegible],5[illegible]	Yes*

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure and earnings while in school)	$[illegible]5	$[illegible],5[illegible]	No
Last Earnings (age, region, job tenure	$[illegible],[illegible]	$[illegible],[illegible]	Yes
Change in Earnings (age, region, job tenure and first earnings)	$[illegible],[illegible]	$2[illegible]	No

Type of Job	[illegible]	Programmers	Is the relationship significant?
[illegible]	$[illegible],[illegible]	$[illegible]	No
[illegible]	$[illegible]	$[illegible]	Yes
[illegible]	$[illegible]	$[illegible]	Yes

*
**

However, when we turned to graduates who reported working full time, we found proprietary graduates were unemployed significantly more often ($p<.004$)--1.39 times on the average, to 1.21 times for the public graduate. When we controlled for the incidence of unemployment and analyzed the length of unemployment, public graduates were unemployed an average of one month, 29 days and the proprietary graduates, two months, 8 days, which was significant at the $p<.035$ level. The length of unemployment was related to the job category, a finding that also held in the accounting study. Those holding jobs for which they were trained had shorter periods of unemployment, although the effect was not quite significant.

2. Nonoccupational Experiences of Programming Graduates

Personal Growth. There were no significant differences in ego development between the public and proprietary graduates, nor was there a significant difference in their reading behavior. However, there was a significant ($p<.022$) difference in the rate at which proprietary and public graduates enrolled for more schooling--50 percent of the public graduates reported enrolling for more schooling, compared to 33 percent of the proprietary graduates. Even though ethnic minorities, who were more heavily represented in the proprietary sample, reported returning to school significantly more frequently than Whites ($p<.014$), they did not close the gap between public and proprietary graduates. Most respondents who reported taking more classes were male clerks and males in programming and related jobs, and they were taking occupationally-related courses.

We also found a significant difference ($p<.036$) in proprietary and public graduates' voting behavior. Seventy-four percent of the public graduates reported voting in the last presidential election, compared to 59 percent of the proprietary graduates. There also was a significant ($p<.001$) trend for Whites to vote more frequently than ethnic minorities, who populated the proprietary sample more heavily. One reason the frequency of voting was lower in the ethnic minorities and proprietary sample was that most non-citizens were classified as "other ethnicities" and twenty-four percent of the proprietary sample were non-citizens who could not vote.

Expectations. There were no significant differences between public and proprietary graduates' salary or educational expectations, nor other differences by ethnicity or job category.

Perceptions of Adequacy of Training. People in the lowest level jobs felt the school did just as adequate a job of training [illegible] the highest level jobs, a finding also reported in the [illegible] study. However, whites felt their training was signifi-

cantly ($p<.002$) more adequate than other ethnicities, and public graduates felt their training was significantly more adequate ($p<.001$) than their proprietary counterparts.

Satisfaction.

a. Satisfaction with Earnings. Satisfaction with earnings was not significantly associated with a person's job category. Although ethnic minorities were significantly ($p<.019$) less satisfied with their earnings, there was no significant difference between the public and proprietary graduates' earnings satisfaction.

b. Satisfaction with Work Itself. There was a non-significant trend for males in programming and related jobs to be most satisfied, followed by female clerks, males in unrelated jobs, and male clerks. Whites were significantly ($p<.001$) more satisfied with their jobs than other ethnicities, and public graduates were also significantly more satisfied ($p<.009$) than proprietary graduates, partly because of the smaller number of ethnic minorities in the public sample.

c. Satisfaction Overall. Here, the trends become clear and significant ($p<.021$). Table 65 shows that a person's overall satisfaction was associated with this job category. Males in unrelated jobs were least satisfied, and males in programming and related jobs. most satisfied.

TABLE 65

PROGRAMING GRADUATES' OVERALL SATISFACTION BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Males in unrelated jobs	Female clerks	Male clerks	Males in programing or related jobs
Public	[illegible]	[illegible] (33)	1.88 (33)	1.61 (28)
Proprietary	[illegible]	[illegible] (21)	2.07 (33)	1.53 (19)

Key: 1 Very satisfied
2 Somewhat satisfied
3 Somewhat dissatisfied
4 Very dissatisfied

Whites were significantly more satisfied overall ($p<.004$) and public graduates were significantly more satisfied ($p<.038$) than their proprietary counterparts. The proprietary satisfaction score was pulled down both by ethnic minorities and the large number of males in unrelated and clerical jobs who were clearly not happy with their work. When we asked the graduates if they had it to do over, would they choose the same school, public and proprietary responses were significantly different ($p<.001$). Ninety percent of the public graduates indicated they would, but only 49 percent of the proprietary graduates would choose the same school.

3. Relationship of Institutional Characteristics to Graduates' First Earnings

The average public program lasted 18 months. The average proprietary program lasted 11 months and cost the graduate $2,344. However, we found no significant associations between these and other institutional variables and the first earnings of the graduates because of limited variability in the school sample.

4. Costs to the Student

As table 66 shows, programming training cost the proprietary graduate considerably more.

Costs to the proprietary graduate were 1.63 times that for public graduates for three main reasons:

1) Although the proprietary programs were 60 percent as long as public programs, the proprietary students did not work and earn as much as the public students, which meant that the proprietary students' foregone income was more than the public students'. We think the proprietary students earned less while in school because the programs were more intensive, requiring 25-30 hours of classroom work each week (Wilms, 1973).

2) The proprietary sample had more ethnic minorities who earned less and consequently had lower earnings potential.

3) The cost of the program was paid out of the proprietary students' pocket. We pointed out in chapter 3 that weekly teaching costs were 2.23 times more in the public schools, but that cost was not borne by the public school student, but by taxpayers.

Proprietary graduates probably rated their training as less adequate and were less satisfied because they paid a substantial amount for their training. When the proprietary graduate evaluated the benefits of their training in the labor market, he likely felt it

TABLE 66

COSTS OF PROGRAMING TRAINING BY TYPE OF SCHOOL

	Public	Proprietary
Potential Earnings (unadjusted weekly earnings less 10% X weeks in school)	$6388	$4676
-less-		
Earnings while in School (unadjusted weekly earnings X weeks in school)	-3276	-1344
-equals-		
Foregone Earnings	$3112	$3332
-plus-		
Program Charges to the Student	+ 368	+2344
-equals-		
Total Costs to the Student	$3480	$5676

did not measure up to his out-of-pocket expense. The public graduate, who paid very little, was not as critical of his training.

5. Serendipity

We found that a person's high school grade point average was significantly associated ($p<.001$) with his or her current job category and, consequently, earnings. That association is shown in table 67.

We described [Wilms, 1973] the "inflationary factor" operating in grade point averages (high grades are easier to get in low-status high school programs). We were interested to find this strong, inverse relationship between grades and earnings in the programming analysis.

TABLE 67

RELATIONSHIP OF TYPE OF JOB, FIRST EARNINGS ON CURRENT JOB AND SELF-REPORTED HIGH SCHOOL GRADE POINT AVERAGE

Type of Job	First Earnings	High School GPA
Males in programing or related jobs	Highest	Lowest
Males in unrelated jobs	Medium high	Medium low
Male clerks	Medium low	Medium high
Female clerks	Lowest	Highest

III. Electronic Technician Graduates' Experiences after School

A. SUMMARY

Our hypothesis was not confirmed on electronic technicians. The average public graduate went to school for 22 months, compared to the average proprietary graduate who spent 18 months in school. The groups were similar on all dimensions, except the public sample included significantly ($p<.001$) more ethnic minorities (49% compared to 30% in the proprietary), and the graduates of public schools were significantly older ($p<.002$) than proprietary graduates.

Our analysis on these samples showed that:

- Twenty-two out of 100 graduates got jobs as electronic technicians or related high status jobs.

- Fifty-nine out of 100 graduates got jobs related to electronic technician work, but lower status, such as radio and TV repair and craft apprenticing.

- Nineteen out of 100 graduates got unrelated, low status jobs such as assemblers, freight handlers and laborers.

- Public and proprietary graduates got almost the same kinds of jobs after school, but public graduates earned $136.25 per week compared to proprietary graduates who earned $125.50. The difference was significant ($p<.025$).

- During their first jobs, proprietary graduates in low status but related jobs got significantly ($p<.005$) more promotions and earned more, closing the gap in earnings. When we looked at last earnings on the first job, the difference was not significant although the public graduates still earned a little more.

- Those in high status jobs earned most, and those in low status jobs earned least.

- Public graduates paid an average of $[illegible] for their courses, and proprietary graduates paid an average of $[illegible]. This difference in school charge to the student was the main reason that, when all costs were considered, proprietary graduates' training costs were $[illegible] compared to the public graduates' $[illegible].

- [illegible]

- whether graduates were on their first or subsequent jobs, public graduates earned significantly ($p<.037$) more at first, but the difference between public and proprietary graduates' salaries [illegible] were not significant.

- Proprietary graduates were unemployed significantly ($p<.018$), [illegible] difference in the duration of unemployment.

- There were no significant differences in personal growth between public and proprietary graduates.

- Public graduates expected to earn significantly ($p<.003$) more in the future but the difference was due to the higher earnings of the public graduates.

- There were no differences in satisfaction with earnings, their jobs or satisfaction overall between public and proprietary graduates. There was a nonsignificant trend for men in higher level jobs to be more satisfied with their jobs.

- There were no significant differences in how graduates perceived the academic of their training.

B. DETAILED ANALYSIS

We included only programs aimed at training electronic technicians (U.S. Census Code 173, NORC prestige code 47). We excluded programs that trained people for electronic engineering, data processing and TV repair, and electricians' jobs. All graduates were males. As table 68 shows, we completed interviews with 87 percent of the public and 90 percent of the proprietary graduates.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

At the time of the interview, most graduates were working full time, as table 69 shows.

TABLE 69

DISTRIBUTION OF ELECTRONIC TECHNICIANS BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

	Public	Proprietary
Unemployed (never had a full-time job)	6	30
Working part-time	2	3
Working full-time	101	271
Total[a]	109	304

[a]These do not total 476 because some cases were deleted for analytic purposes.

we arrayed their jobs according to the following categories:

1) Men in unrelated jobs fell into the lowest category, which covered assemblers, freight handlers, and laborers. This category goes up to the NORC rating of 36.

2) Men in lower level crafts were put into this category. It included the lower end of the [illegible] Census Craft and Kindred category, and telephone repairmen and craft assemblers [illegible]. This category goes up to the NORC prestige rating of [illegible].

3) Men in higher level crafts were put into this category which included the upper portion of Crafts and Kindred workers, covering jobs like electrician, data processing repair, and radio and TV repair. This category goes up to the NORC prestige rating 49.

4) Men in the highest status jobs were put into this group. It included Professional, Technical and Kindred, and Managers and Administrators. The major jobs within this group were electronic technician, electronic engineering technician, electrical engineering, and programming. This category goes up to the NORC prestige rating 76.

Forty-one men got jobs as clerks, but we deleted them from the analysis because their jobs were scattered across the U.S. Census "Clerical" classification and their numbers were too small to analyze.

Table 70 shows the distribution of the electronic technician graduates on their first job.

TABLE 70

DISTRIBUTION OF ELECTRONIC TECHNICIAN GRADUATES BY TYPE OF FIRST JOB

Unrelated jobs ≤ NORC 28	Low crafts ≤ NORC 41	High crafts ≤ NORC 49	Electronic technician and related jobs ≤ NORC 76
19 (23)	33 (122)	26 (99)	22 (82)

We tested this distribution against the graduates' first earnings on their first job. The results, shown in table 71, gave us confidence that our groupings made conceptual as well as practical sense.

TABLE 71

ELECTRONIC TECHNICIANS' AVERAGE FIRST WEEKLY EARNINGS ON FIRST JOB (controlling for respondents' job tenure, region, age and earnings while in school)

Unrelated jobs ≤ NORC 36	Low crafts ≤ NORC 41	High crafts ≤NORC 1	Electronic technician and related jobs ≤NORC 76
$115.50 (64)	$126.25 (122)	$131 (99)	$139 (82)

We analyzed the electronic technicians' backgrounds to see if there were significant differences between the public and proprietary graduates, and if those differences were related to the kinds of jobs graduates got. Table 72 summarizes the results.

TABLE 72

RELATIONSHIP OF ELECTRONIC TECHNICIANS' BACKGROUND CHARACTERISTICS TO TYPE OF SCHOOL AND TYPE OF JOB

	Are background characteristics different between public and proprietary graduates?	Are background characteristics significantly associated with type of first job?
Socioeconomic status	No	No
Father's occupation	No	No
Educational status	No	No
Ego development	No	No
Age	Yes*	No
Ethnic background	Yes**	No

*p
**p

Table 72 shows that while there are differences in the public and proprietary graduates' age and ethnic backgrounds, neither were significantly associated with the level of their first job.

We found that 49 percent of the public but only 15 percent of the proprietary graduates were working while they were in school. We assumed that some students kept their same jobs after graduation, which could possibly mean they had higher earnings to start with, so we controlled for earnings while in school and job tenure when looking at full-time job earnings after graduation.

Forty-five percent of the public graduates were veterans and 41 percent of the proprietary graduates were. Their earnings conformed to the same pattern as the larger sample and there were no significant differences between the public and proprietary veterans' earnings.

Twenty percent of the public and only 5 percent of the proprietary graduates were noncitizens. Eighty-five percent of them were from ethnic minorities. Because the public sample had 49 percent ethnic minorities, the proprietary sample 20 percent, we displayed the earnings for Whites and other ethnicities separately. Within these categories we have captured most noncitizens.

1. Careers of Electronic Technician Graduates

a. First Job

The average electronic technician took one month, one day to get his first job after graduation, and there was no difference between public or proprietary graduates. Table 73 shows that only 28 percent of the men in the lowest job category felt their jobs were related to their training, but between 70-75 percent of those in the upper three categories said theirs were. The relationship was significant at the $p<.001$ level.

TABLE 73

ELECTRONIC TECHNICIANS REPORTING THAT THEIR JOBS WERE RELATED TO THEIR TRAINING BY TYPE OF JOB

Unrelated jobs ≤NORC 36	Low crafts ≤NORC 41	High crafts ≤NORC 49	Electronic technician and related jobs ≤NORC 76
[illegible]	[illegible]	[illegible]	70 (82)

Kind of First Job. Table 74 shows the distribution of graduates on their first jobs by types of jobs and type of school. There were no significant differences between the kinds of jobs public or proprietary graduates got.

TABLE 74

[illegible] ELECTRONIC TECHNICIAN GRADUATES IN FIRST JOB
BY TYPE OF SCHOOL

Type of School	Unrelated jobs ≤ %ORC 36	Low crafts ≤ %ORC 41	High crafts ≤%ORC 49	Electronic technicians and related jobs ≤ %ORC 76
Public	22 (23)	27 (27)	26 (26)	25 (25)
Proprietary	17 (46)	35 (95)	27 (73)	21 (57)

First Earnings on First Job. After controlling for differences in respondents' age, region, job tenure and earnings while in school, we found a significant relationship ($p<.001$) between a person's job and his earnings. Those in the lowest jobs earned least ($115.50 per week) and those in the highest jobs earned the most ($139 per week). Whites earned significantly ($p<.001$) more than other ethnicities and public graduates earned significantly ($p<.025$) more than proprietary graduates ($136.25 vs. $125.50). See table 75.

Last Earnings on First Job. The differences in earnings associated with a person's type of job have almost washed out. The men in the top electronic technician jobs still earned the most, and those in unrelated, low level jobs earned the least, but the earnings of the men in the low crafts, particularly the proprietary graduates, increased the most--a change of $37.25. The increase for this group made the gap between public and proprietary graduates not significant, although the public graduates still earned more. However, the proprietary graduates increased their weekly earnings significantly more ($p<.001$) than the public.

[illegible]

[illegible]

	Unrelated jobs [illegible]	Low crafts [illegible] 41	High crafts [illegible] 44	Electronic technicians and related jobs [illegible] 76	Is the relationship significant?
First Earnings (age, region, job tenure, earnings while in school)	[illegible]	[illegible]	$131	$139	Yes***
Last Earnings (age, region, job tenure)	[illegible]	[illegible].25	$163.75	$164.25	No
Change in Earnings (age, region, job tenure)	$ [illegible]	$ 37.25	$ 32.75	$ 30	Yes***

Ethnicity	White	Other		Is the relationship significant?
First Earnings (age, region, job tenure, earnings while in school)	$126.50	$123.75		Yes***
Last Earnings (age, region, job tenure)	$164.75	$153		No
Change in Earnings (age, region, job tenure)	$ 34.75	$ 32.75		Yes**

Type of School	Public	Proprietary		Is the relationship significant?
First Earnings (age, region, job tenure, earnings while in school)	$136.25	[illegible]		Yes*
Last Earnings (age, region, job tenure)	[illegible]	[illegible]		No
Change in Earnings (age, region, job tenure)	$ [illegible]	$ [illegible]		Yes***

*[illegible]
**[illegible]
***[illegible]

Promotions on the First Job. After controlling for the respondents' age and job tenure, proprietary graduates got significantly ($p<.005$) more promotions than public graduates. Most promotions went to proprietary graduates in the low craft jobs who, as we saw earlier, increased their earnings more than any other group, closing the gap in first job earnings between the public and proprietary samples.

b. Job Changers

Twenty-two percent (22) of the public and 29 percent (79) of the proprietary graduates changed jobs. The average public job changer's last earnings on his first job was $148.75 and the average proprietary job changer earned $136.75. They were among the low earners and changed jobs to increase their earnings. The job changers were evenly distributed by type of job, and as many increased their job status as decreased it. Public graduates earned significantly ($p<.023$) more than proprietary graduates, even after controlling for last earnings on first job (plus the respondents' age and region). The average public job changer's first weekly earnings were $165.75, and the average proprietary graduate's earnings were $160.75. These figures show that those who earned less on their first jobs could catch up by changing jobs.

c. The Sample as a Whole

First Earnings on Current Job. Table 76, which reflects the earnings for the samples on their current jobs whether they were their first or subsequent jobs, shows those in higher level jobs earned significantly ($p<.001$) more. Whites earned significantly more ($p<.001$) than other ethnicities. Public graduates earned significantly ($p<.037$) more than proprietary graduates.

Last Earnings on Current Job. Although the proprietary graduates earned less, the difference was not significant, so there was more deviation from the average public earnings of $176.75 and proprietary earnings of $164.25 than when we looked at the first earnings. The greater deviation could be traced to the proprietary graduates in low craft jobs who got more promotions and earned more, and the proprietary graduates in lower paying jobs who changed jobs and increased their earnings. However, even though the public sample had more ethnic minorities who earned less, the public graduates gained significantly ($p<.001$) more in earnings than proprietary graduates after controlling for the respondents' age, region, job tenure, and first earnings.

Unemployment. After controlling for a respondent's age and job tenure, proprietary graduates were unemployed significantly more often ($p<.019$). The average public graduate had [illegible] times and the average proprietary graduate, 1.33 times. When we took into account the number of times unemployed, there was no significant difference in the number of part-time weeks worked.

					Is the relationship significant?
					Yes****
					No
					Yes****

Ethnicity	White	Other			Is the relationship significant?
		$123			Yes****
					Yes**
		$ 31			Yes***

Type of school	Public	Proprietary			Is the relationship significant?
		$132			Yes*
					No
		$ 34			Yes****

*
**
***
****

2. Nonoccupational Experiences of Electronic Technician Graduates

Personal Growth. We found no significant differences between the public and proprietary graduates' ego levels, or reading or voting behavior. As table 77 shows, almost twice the proportion of public graduates went back to school, mostly for occupational training.

TABLE 77

ELECTRONIC TECHNICIAN GRADUATES WHO REPORTED TAKING MORE SCHOOLING, BY TYPE OF SCHOOLING
(as percent of total public and proprietary sample)

	Public	Proprietary
Classes related to same occupation	51 (56)	24 (74)
Classes related to different occupation	17 (18)	8 (24)
Classes not related to an occupation	6 (7)	3 (8)

On the basis of this analysis, we concluded there were no differences in personal growth between the public and proprietary samples. Although the public graduates returned to school significantly ($p<.001$) more often than the proprietary graduates, the schooling was primarily occupationally-related.

Expectations. Public graduates expected to earn significantly more than proprietary graduates ($p<.003$) expected to earn, both three to five years from now, and six to ten years from now. This finding was not surprising because expectations are partly a function of what a person has. The public graduates earned more than the proprietary graduates, so they, predictably, expected to earn more in the future. More public graduates expected to get higher degrees (80 of the public and 68 of the proprietary), but there was no difference in the degree level they expected to get.

Satisfaction. We found no significant differences between the public and proprietary graduates' satisfaction with earnings, the job itself, or satisfaction overall. There was a non-significant trend for those in higher level jobs to be more satisfied.

Graduates' Perceptions of the Adequacy of their Training. Unlike the other five occupations, we found no significant differences in the public and proprietary graduates' rating on adequacy of their training which they both rated midway between "very good" and "good." There was a significant ($p < .001$) difference between how many public and proprietary graduates would return to their same schools if they had the chance to do it over. Eighty-eight percent of the public but only 61 percent of the proprietary samples said they would make the same choice again.

3. Institutional Characteristics

We found no relationship between the public schools' characteristics and the success of their graduates. Two proprietary electronic technician schools did not respond to these questions. We did not analyze proprietary school data on this item.

4. Costs to the Student

Table 78 shows that the average public student paid $5,650 to complete an electronic technician's program, compared with $8,769 for the average proprietary student.

TABLE 78

COSTS TO THE STUDENT OF ELECTRONIC TECHNICIAN TRAINING BY TYPE OF SCHOOL

	Public	Proprietary
Potential earnings (adjusted first weekly earnings less 10 x number of weeks in school	$10,388	$9,095
-less-		
Earnings while in school (adjusted weekly earnings x weeks in school	- 3,143	-3,350
	$ 7,245	$5,745
	- 1,595	-1,324
	$ 5,650	$-,76,

The average public program lasted 2? ths, compared with the average proprietary program's 18 months. The age proprietary program requires the student to be in class nc iours each week (Wilms, 1973). Therefore, both potential earnings and earnings while in school were lower for the proprietary graduates. However, in spite of this difference, if the public graduate had paid the school a direct charge for the cost rather than having it paid by taxes, the difference in costs to the student would have been negligible.

IV. Dental Assistants' Experiences after School

A. SUMMARY

Our hypothesis was not confirmed on dental assistants. Public and proprietary graduates found dental assisting jobs in about the same proportion, but after controlling for key background differences, we found:

- Public graduates got their jobs significantly ($p < .018$) faster, and earned significantly more ($p < .001$) on their first jobs.

- Those who took jobs other than dental assisting got more promotions and earned 5 percent more per year.

- Those that went to work as dental assistants earned an average starting salary of $81 per week.

- Almost half the proprietary graduates employed as dental assistants who changed jobs switched to some other field and increased their earnings.

- However, public graduates earned significantly more ($p < .006$) initially, although the proprietary graduates who changed jobs had almost caught up in earnings when the survey was taken.

- Public graduates went to school an average of 12 months, and proprietaries went 4-1/2 months and paid an average of $1066 for their course.

- Nineteen percent of the public graduates and 42 percent of the proprietary graduates changed jobs. Those who changed jobs were earning less than the average on their old jobs, and they changed to increase their earnings.

When we viewed the sample together, we found:

- The public graduates earned significantly more ($p < .005$) initially. When they reported their final earnings, they still were earning significantly ($p < .035$) more.

- There were no significant associations between the school characteristics and the earnings of the graduates.

- The costs of training to the student were $4017 for the public and $2486 for the proprietary graduate.

- Public graduates rated their training as significantly ($p < .029$) more adequate than the proprietary graduates, and they were significantly more satisfied ($p < .013$) overall.

- Eighty-eight percent of the public, but only 52 percent of the proprietary graduates said they would choose the same school over --a finding significant at the $p < .011$ level.

- About 10 percent of both pbulic and proprietary graduates never had a job. Among those who had held jobs, the public graduates were unemployed fewer times ($p < .001$), and their periods of unemployment were shorter ($p < .024$) than the proprietary graduates'.

- There were no significant differences in personal growth, measured by ego development, enrollments in further education, reading, or voting behavior.

B. DETAILED ANALYSIS

We surveyed graduates of programs designed to produce Dental Assistants (U.S. Census Code 921, NORC prestige code 48). We excluded medical assistants, technologists, and dental hygienists.

Table 79 shows that from the net sample, NORC completed interviews with 91 percent of the public graduates and 83 percent of the proprietary graduates.

TABLE 79

CREATION OF THE DENTAL ASSISTING SAMPLE BY TYPE OF SCHOOL

Type of school	Original sample	Deleted	Net sample	Refused	Completed interviews	Completion rate
Public	224	3	221	2	201	91%
Proprietary	334	3	331	52	279	83%

Twenty percent of the public graduating class was made up of ethnic minorities, and the public sample NORC interviewed after their graduation was made up of 22 percent of ethnic minorities. However, the proprietary graduating class was 25 percent ethnic minorities, but the sample of interviewed graduates had only 16 percent of ethnic minorities. The 49 respondents that NORC could not find came from proprietary dental assisting schools with high proportions of ethnic minorities. Probably the group NORC could not find was heavily weighted with ethnic minorities.

Table 80 shows the distribution of the dental assisting graduates.

TABLE 80

DISTRIBUTION OF DENTAL ASSISTING GRADUATES BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

Distribution	Public	Proprietary
Unemployed (never had full-time job)	19	23
Working (part-time)	7	10
Working (full-time)	175	246
Total sample	201	279

As Table 81 below shows, 80 percent of the public and proprietary graduates got jobs as dental assistants, and 20 percent took "other" jobs. Jobs in the "other" category fell in the U.S. Census category 301 and below, carrying a top NORC prestige rating of 46. Sixty-seven percent of the "other" jobs were clerical (mostly receptionists, clerks, and typists), and the remainder fell between the craft, operative, and service occupations.

TABLE 81

DISTRIBUTION OF DENTAL ASSISTING GRADUATES BY TYPE OF FIRST JOB (in percents)

Dental assistant	Other
80 (336)	20 (82)

When we tested the relationship of selected demographics to type of school and type of job, we found that a person's socioeconomic status and the prestige of father's occupation were related to the job category the student found after graduation. (See Table 82.)

TABLE 82

RELATIONSHIP OF BACKGROUND CHARACTERISTICS TO TYPE OF SCHOOL AND TYPE OF JOB

	Are background characteristics different between public and proprietary graduates?	Are background characteristics significantly associated with first earnings?
Socioeconomic status	No	No
Father's occupation	No	No
Educational status	No	No
Ego development	No	No
Age	Yes*	Yes*
Ethnic background	No	Yes**

*$p < .02$
**$p < .001$

Those with high socioeconomic status whose fathers were in higher status occupations, were employed as dental assistants significantly ($p < .02$) more often than those with lower socioeconomic status, whose fathers had lower status jobs. But, as we report later, these background characteristics were not associated with higher earnings because dental assistants earned less than those in other jobs.

1. Careers of Dental Assisting Graduates.

a. First Job

There was a significant difference ($p<.018$) between the time it took public and proprietary graduates to get their first jobs after graduation, after controlling for those who worked full-time while in school and kept those same jobs. Public graduates got their first job, on the average, 27 days after graduation, and the proprietary graduates, one month and three days after graduation.

Kind of First Job: Table 83 shows that public and proprietary graduates got dental assisting jobs at about the same rate. Unlike the higher level occupations (accounting, programming, electronic technician) where only two out of ten were placed in jobs for which they were trained, eight out of ten dental assisting graduates found dental assistant jobs.

TABLE 83

DISTRIBUTION OF DENTAL ASSISTING GRADUATES
BY TYPE OF FIRST JOB AND TYPE OF SCHOOL

Type of School	Dental Assistants	Other
Public	82% (142)	18% (31)
Proprietary	79% (194)	21% (51)

Respondents of other ethnicities made up 21 percent of the public and 16 percent of the proprietary samples and those from the proprietary schools were placed in jobs as dental assistants more often than public graduates. The difference was not statistically significant.

TABLE 84

DISTRIBUTION OF DENTAL ASSISTING ETHNIC MINORITIES BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Dental Assistants	Other
Public	78% (28)	22% (8)
Proprietary	89% (34)	11% (4)

Ninety-eight percent of the women working as dental assistants and 35 percent of those working in other jobs reported their first job was related to their training, and the difference was significant ($p<.001$). There was no significant difference between the public and proprietary graduates. The 35 percent of those in other jobs who reported their work was related to their training had clerical jobs such as typists and receptionists.

First Earnings on First Job: Ten percent of both public and proprietary graduates were working full-time while in school, so we controlled for job tenure. We also controlled for age and region. As Table 85 shows, those who got jobs as dental assistants made a little less than those in other jobs--about $3.75 per week after controlling for age and region. The results were almost, but not quite, significant. Other ethnicities earned significantly more ($p<.004$) than whites, and public graduates began their first jobs earning significantly ($p<.001$) more than their proprietary counterparts--$12.25 per week.

Final Earnings on First Job: After controlling for respondents' age, job tenure, and region, those in dental assisting jobs still made slightly less than those in other jobs. Whites made a little more than ethnic minorities, but the difference was not significant. Public graduates still earned significantly ($p<.001$) more than proprietary graduates --about $8.75 per week.

Changes in Earnings on First Job: Table 86 shows that none of the changes in earnings was significant for any group.

TABLE 85

DENTAL ASSISTING GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON FIRST JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of Job	Dental Assistant	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$81	$84.75	No
Last Earnings (age, region, job tenure)	$92.25	$95.75	No
Change in Earnings (age, region, job tenure)	$11.75	$11	No

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$81.50	$83.50	Yes*
Last Earnings (age, region, job tenure)	$93.75	$92.25	No
Change in Earnings (age, region, job tenure)	$12	$9	No

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure)	$89.25	$77	Yes**
Last Earnings (age, region, job tenure)	$96.50	$89.75	Yes**
Change in Earnings (age, region, job tenure)	$7.25	$12.75	No

*
**

Promotions on First Job: Proprietary graduates got as many promotions as public graduates, but those employed as dental assistants got half as many as those in other jobs ($p<.001$).

b. Job Changers

Nineteen percent (39) of the public graduates changed jobs. The vast majority (80%) of those were employed as dental assistants, and most of them shifted to other dental assisting jobs. Twenty percent of the changers were ethnic minorities--the same proportion of ethnic minorities in the public sample.

Forty-two percent (117) of the proprietary graduates changed jobs and most changers had dental assistant jobs. However, 45 percent of those proprietary graduates employed as dental assistants who changed jobs (45), shifted to other occupations. Only six percent of the job changers were ethnic minorities.

If we look at the last earnings of this group on their first jobs, we find the public and proprietary graduates earned about the same. However, if we compare the last earnings on the first job of the job changers with the last earnings on the first job of the total sample, we find those who changed were earning less. The job changers probably changed jobs to increase their earnings, even if they had to take jobs unrelated to their training.

First Earnings of Job Changers on Subsequent Jobs: There was still a nonsignificant trend for those in other jobs to earn more, and there was no difference in earnings by ethnic group. However, after controlling for last earnings on first job, region, and respondents' age, we found that public graduates were still earning significantly ($p<.006$) more ($8.25 per week) than the proprietary graduates--many of whom had shifted out of their trade.

Final Earnings of Job Changers: There was not a significant difference in earnings between those women working as dental assistants and those in other jobs, nor was there a difference by ethnic group. The group of proprietary graduates who left dental assisting jobs to increase their earnings, closed the earnings gap between public and proprietary job changers. There was still a trend for public graduates to earn more ($106.75 versus $103 per week).

TABLE 86

DENTAL ASSISTING GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON CURRENT JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of Job	Dental Assistant	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$87.25	$92	No
Last Earnings (age, region, job tenure)	$[illegible]	$101.75	No
Change in Earnings (age, region, job tenure and first earnings)	$13	$10.75	No

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$87.50	$92.25	Yes***
Last Earnings (age, region, job tenure)	$100.75	$103.25	Yes**
Change in Earnings (age, region, job tenure and first earnings)	$12.75	$11	No

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure	$92.25	$85.50	Yes****
Last Earnings (age, region, job tenure)	$103.50	$99.50	Yes*
Change in Earnings (age, region, job tenure and first earnings)	$11.75	$13	No

*p < .035
**p < .02
***p < .008
****p < .005

c. The Sample as a Whole

When we asked the dental assisting graduates if their current job was related to their training, eighty-four percent of the public and sixty-eight percent of the proprietary graduates said it was. This significant (p<.001) difference was not surprising because of the relatively large number of proprietary women who changed from dental assisting to other jobs.

First Earnings: There was no significant difference in earnings between those women employed as dental assistants, and those in other jobs, although dental assistants made a little less, as Table 8C shows. [illegible] ethnic minorities earned significantly more (p<.006) than [illegible] the public graduate sample, which contained more ethnic minorities, earned significantly more (p<.005) than their proprietary [illegible] counterparts.

Final Earnings and Changes in Earnings: Table 8F shows that there was not a significant difference in final earnings or changes in earnings between those employed as dental assistants and those in other jobs. Ethnic minorities earned significantly more (p<.02) and public graduates earned significantly more than proprietary graduates.

Unemployment: Nine percent of the public and eight percent of the proprietary graduates never found a full-time job after graduation. Among the majority of graduates who were employed full-time, the proprietary graduates had experienced significantly (p<.001) more periods of unemployment (1.67 times) than the public (1.43 times) after controlling for the respondents' age and job tenure. Their periods of unemployment were longer too (3 months and one day for the proprietary graduates versus 2 months and 19 days for the public graduates), and the difference was significant (p<.024).

2. Nonoccupational Experiences of Dental Assisting Graduates

Personal Growth: We found no significant differences on any of the personal growth items between public and proprietary graduates--ego development, enrollment for further education, reading, or voting behavior. Those who did enroll for further education (26% of the public and 22% of the proprietary) enrolled mostly for occupational courses.

Expectations: There was no significant difference between the public and proprietary graduates' salary or educational expectations.

Perceptions of the Adequacy of Training: As Table 8J shows, those in dental assisting jobs perceived their training as significantly (p<.023) more adequate than those in other jobs. Although ethnic minorities tended to rate their training more harshly than whites (p<.03)

DENTAL ASSISTING GRADUATES' PERCEPTIONS OF
[illegible] TRAINING BY TYPE
JOB AND TYPE OF SCHOOL

Type of School	Dental Assistants	Other
[illegible]	[illegible]	[illegible]
Proprietary	2.75 (104)	3.38 (52)

Key: 1 = Excellent
2 = Very good
3 = Good
4 = Fair
5 = Poor
6 = Very bad

and there were more ethnic minorities in the public sample, the public graduates rated their training as significantly more adequate than the proprietary graduates ($p<.001$) rated theirs. The average public rating was midway between very good and excellent. The average proprietary rating was over a full step below, slightly above good.

Satisfaction with Earnings: Whites were significantly more satisfied with their earnings ($p<.01$) than were other ethnicities, even though the ethnic minorities earned more than whites. This finding indicates that the ethnic minorities had considerably higher expectations. Although the public graduates earned significantly more than their proprietary counterparts, there was only a non-significant trend for them to be more satisfied. Ethnic minorities were more heavily concentrated in the public sample and they had a lower level of satisfaction.

Satisfaction with the Job Itself: Those in dental assisting jobs were significantly more satisfied with their jobs ($p<.002$) than those in other jobs. Whites were significantly more satisfied ($p<.002$) than women of other ethnicities. Public graduates were significantly more satisfied with their jobs than proprietary graduates ($p<.024$).

Satisfaction Overall: As Table 88 shows, those in jobs for which they were trained were more satisfied ($p<.018$) overall than those who were in other jobs. Whites were more satisfied than ethnic minorities ($p<.001$), and public graduates were more satisfied than their proprietary counterparts ($p<.005$).

TABLE 88

DENTAL ASSISTING GRADUATES' OVERALL SATISFACTION
BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Dental Assistants	Other
Public	1.39 (128)	1.46 (26)
Proprietary	1.54 (151)	1.84 (43)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

When we asked the graduates if they had it to do over, would they choose the same school, 88 percent of the public graduates and 82 percent of the proprietary graduates said "yes." The difference was significant at the $p<.001$ level. There were no differences between whites and other ethnicities.

3. Institutional characteristics.

The average public dental assisting graduate went to school for 12 months at virtually no cost, while the average proprietary graduate spent only 4 1/2 months in school but paid $1070. Public graduates earned more, but within the public and proprietary schools, the length of the program was not significantly related to earnings after graduation.

The average public school offering a dental assisting program was 15 years old, and the average proprietary school was four years old--significantly ($p<.001$) different. However, school age was not significantly related to the graduates' earnings.

There were also no significant associations between the schools' teacher salaries, teaching loads, size, or accreditation status, and their graduates' earnings. The school sample was small and consequently lacked variability.

4. Costs to the Student.

Table 89 shows that even though public programs were publicly subsidized by taxes, and the proprietary graduate paid school charges 118 times public school charges, the total costs of training were 39 percent less to the proprietary graduate.

The main reason the public programs were so much more expensive to the student is that they averaged almost three times as long to complete. Consequently, the public student gave up more potential earnings to go to school than the proprietary. Even after adding in a substantial school charge to the student ($1066), the total costs to the student are far lower in a proprietary school.

We concluded that proprietary graduates rated their training as less adequate, were less satisfied and would repeat their school choice less often because, even though the costs of training to them were less, they paid 118 times more in direct payments to the schools. After graduation both groups earned less than the 1974 poverty level for a family of four, but the proprietary graduates earned significantly less than the public graduates who paid virtually nothing out of their own pockets to the schools. Also, foregone income, while an important consideration for older students, may not have been as central in the dental assisting students' decisions, for they were the youngest group of the six.

TABLE 89

[illegible]

	Public	Proprietary
Potential Earnings (unadjusted weekly earnings less, [illegible] X weeks in school)	$4212	$1380
-less-		
Earnings while in school (unadjusted weekly earnings X weeks in school)	- 338	- 0
-equals-		
Foregone Earnings	$3874	$1380
-plus-		
Program Charges to the Student	+ 9	+1066
-equals-		
[illegible] to the Student	$4017	$2466

V. Secretaries' Experiences after School

A. SUMMARY

Our hypothesis was confirmed for secretarial graduates, but with two qualifications: (1) Secretarial students of ethnic minorities from proprietary schools comprised 31 percent of the graduating class, but the sample we reached in the labor market had only 15 percent ethnic minorities. (2) Public programs enrolled many more students than graduated. For example, one public school enrolled close to 2000 secretarial students but graduated only one during the year. We do not know if most public secretarial students opted out early for jobs, transferred to four-year colleges, changed their majors, or dropped out, but most did not make it through to graduation. Those that did complete the public programs had significantly lower socio-economic and educational status (both of which are related to earnings) than their proprietary counterparts. Generally, people with higher SES and educational status earned more, but not always. Because this relationship was not always positive, we could not reliably control for socioeconomic and educational status differences. Readers should keep these factors in mind when interpreting our results.

Our data showed that:

- The average public program lasted 19 months, and the average proprietary program 13 months. The proprietary graduate paid an average of $2383 for her training.

- Although there was not a significant difference in initial earnings, the proprietary graduates earned significantly more ($p < .012$) in the long run on the first job and increased their earnings more than their public counterparts, even after controlling for region, age, and earnings while in school, and job tenure.

- Although the proprietary graduates got secretarial jobs more often than public graduates, the difference was not statistically significant. We classified the graduates' first jobs as (1) clerk typist, or (2) secretarial.

- Both public and proprietary graduates got their first jobs in about the same amount of time.

- [illegible] graduates [illegible] graduates, they [illegible] [illegible] graduates.

- There were no differences in satisfaction with earnings or the kinds of jobs the graduates held. However, we found that ethnic minorities were more satisfied overall than their white classmates if they went to a public school, and less satisfied than their white classmates if they went to a proprietary school ($p < .048$).

- Ninety-three percent of the public but only 75 percent of the proprietary graduates said they would choose the same school over. The difference was significant at the $p < .005$ level.

- There was no relationship between the length or cost of the program and the earnings of the graduates. The average proprietary school was significantly older ($p < .001$), smaller ($p < .001$, and their teachers were paid significantly less ($p < .001$) and worked more ($p < .001$) than the public schools.

- There were no significant associations between these and other institutional characteristics and the success of their graduates for the public schools, but we did find that proprietary graduates who got secretarial jobs and earned most went to schools that were larger, with higher paid, younger faculties that worked the longest hours.

- Costs of training to the student were about the same ($7201 for public and $7281 for proprietary) even though the public programs were heavily subsidized by taxes. That subsidy was not included in this calculation, and if it were the public costs would have been considerably higher than the proprietary.

- Twenty-two percent of the public graduates changed jobs, but few shifted job categories. Thirty-one percent of the proprietary graduates also changed jobs, but few changed job categories.

- Both public and proprietary job changers were earning less than the average clerk or secretary on their first jobs, and changed to increase earnings, which they did. However, the proprietary job changers increased their earnings significantly ($p < .02$) more than the public job changers.

- On the entire sample (those on their first or subsequent jobs), proprietary graduates earned significantly more on their current jobs ($p < .007$) at first, and significantly more ($p < .001$) when the survey was taken.

- There was not a significant difference in the indicence of unemployment, but public graduates had significantly longer ($p < .001$) period of unemployment.

- There were no significant differences in the graduates' personal growth, and their salary and educational expectations were about the same.

B. DETAILED ANALYSIS

We surveyed graduates of public and proprietary secretarial programs in each of the four metropolitan areas. We selected programs that trained only secretaries and excluded programs for clerk-typists, stenographers, and legal or medical secretaries. Table 90 shows that from the net sample, NORC completed interviews with 86 percent of both public and proprietary graduates.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The proprietary graduating class had 31 percent ethnic minorities, but the sample we surveyed after graduation included only 15 percent ethnic minorities. NORC made intensive tracing efforts (described in Appendix 1) but could not locate the 38 proprietary graduates, many of whom were part of the ethnic minority sample. They seemed to have vanished without a trace.

Our sample included all graduates of four public and seven proprietary secretarial programs during 1970-71 and 1972-73. The proprietary schools graduated 595 secretaries (we randomly selected 400), but the public schools graduated only 101 secretaries. In fact, one of the metropolitan community colleges enrolled 1868 secretarial students but graduated only one. This difference between enrollees and graduates suggests that the vast majority of people enrolled in public secretarial programs opted out early for employment or changed majors, transferred to four-year colleges, or dropped out before graduating. The few who finished may have been much different from those who originally enrolled. We will pay particular attention to this question in the final stage of the study.

Table 91 shows the main activity of the sample. The majority [illegible] fall into two categories:

TABLE 91

DISTRIBUTION OF SECRETARIAL GRADUATES BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

	Public	Proprietary
Working full-time	60	271
Working part-time	2	5
Not employed	8	5
Deleted from the analysis[a]	5	28
Total	75	309

[a]See paragraph below.

1. Thirty-eight percent (127) were working as stenographers (U.S. Census Code 376), typists (391), and clerks (394, 395). These jobs carry a NORC prestige rating from 36 to 43.

2. Sixty-two percent (204) were working as secretaries (372), legal secretaries (373), and medical secretaries (371). These jobs carry an NORC rating of 46.

We deleted 33 cases from the analysis because they were scattered across the occupational grid and we could not group such a small number in any sensible way for analysis. The graduates we dropped held jobs like professional personnel workers and amusement park attendants. See Table 92 for the distribution of graduates.

TABLE 92

DISTRIBUTION OF SECRETARIAL GRADUATES
BY TYPE OF JOB

Secretary	Clerk-typist
62 (204)	38 (127)

As Table 93 shows, occupational grouping was significantly ($p<.002$) associated with first weekly earnings--the clerk-typists earned less ($97.75 per week on the average), and the secretaries earned more ($105.50 on the average).

TABLE 93

FIRST WEEKLY EARNINGS BY TYPE OF JOB
(controlling for respondents' job tenure, region, age, and earnings while in school)

Secretary	Clerk-typist
$105.50 (200)	$97.75 (125)

We found no significant associations between the graduates' background characteristics and the type of job they got, probably because there were only two job types, quite close together in earnings. However, when we looked at those same characteristics in relation to the graduates' first earnings (a variable that gives a wider range), we found the significant associations shown below in Table 94.

TABLE 94

RELATIONSHIP BETWEEN BACKGROUND CHARACTERISTICS AND TYPE OF SCHOOL ATTENDED

Background characteristics	Socioeconomic and educational characteristics different between public and proprietary graduates?	Are background characteristics significantly associated with first earnings?
Socioeconomic status	Yes*	No
Father's occupation	No	No
Ego development	No	No [a]
Educational status	Yes****	Yes****
Age	No	Yes**
Ethnic background	No	Yes***

[a]Ego development was not related to first earnings, but it was significantly ($p < .05$) related to last reported earnings.

*$p < .01$
**$p < .006$
***$p < .002$
****$p < .001$

Table 94 shows there were significant differences in the public and proprietary graduates' socioeconomic and educational status. The proprietary graduates had higher socioeconomic status than the public and they were more likely to have graduated from a college preparatory high school program, while the public graduate, who more likely graduated from the lower-status general or vocational program,

We found the graduates' socioeconomic status and first earnings were related, with those of high SES earning more, although the association was not quite significant. Educational status and earnings were also significantly ($p<.001$) related--those with higher educational status earned more. Ego development was not significantly associated with first earnings, but it was associated with last earnings and changes in earnings ($p<.01$). Those with low ego levels earned less, and those with high ego levels earned more. The graduates' age was also related to earnings ($p<.006$), with those between 22-25 earning the least; those between 18-21 earning the middle salaries; and women 26 and over making the most. Finally, ethnic background was significantly ($p<.002$) related to earnings, with Whites earning more.

Eighteen percent of the public and 13 percent of the proprietary graduates were working full-time while in school. We have controlled for respondents' age and job tenure when looking at earnings and have displayed earnings for different ethnic groups when appropriate.

I. Careers of Secretarial Graduates.

a. First Job

Those of other ethnicities got their jobs just as fast as Whites, and proprietary graduates got their jobs as fast as public graduates. However, those who went to work as secretaries got their first jobs significantly faster ($p<.019$) than those who became clerk-typists. Secretaries got their jobs, on the average, 24 days after graduation, and clerks took a month and six days.

Kind of First Job: Table 95 shows that proprietary graduates found jobs as secretaries a little more often than public graduates, but the difference was not significant.

TABLE 95

DISTRIBUTION OF SECRETARIAL GRADUATES BY TYPE OF FIRST JOB AND TYPE OF SCHOOL

Type of School	Secretary	Clerk-typist
Public	57% (34)	43% (26)
Proprietary	63% (170)	37% (101)

Also, an ethnic minority graduate had a better chance of becoming a secretary through a proprietary school as Table 96 shows, although the public sample was very small and consequently unreliable.

TABLE 96

DISTRIBUTION OF ETHNIC MINORITY SECRETARIAL GRADUATES BY TYPE OF FIRST JOB AND TYPE OF SCHOOL

Type of School	Secretary	Clerk-typist
Public	25% (2)	75% (6)
Proprietary	56% (20)	44% (16)

Self-Reported Relationship of First Job to Training: Eighty-three percent of the clerk-typists said their jobs were related to their training, and ninety-four percent of the secretaries. The difference was significant at the $p<.003$ level. There was no difference by ethnic background or type of school.

First Earnings on First Job: In Table 93 we already saw that first earnings were significantly ($p<.001$) related to the type of job, with clerk-typists making the least and secretaries the most. Table 97 shows that Whites also earned significantly more ($p<.002$) than other ethnicities. Although public graduates earned $99.75 per week and proprietary graduates $103 per week, the difference was not significant.

Last Earnings on First Job: Secretaries were still making significantly ($p<.05$) more than clerk-typists ($120.25 compared with $113 per week), and Whites were earning significantly ($p<.001$) more than ethnic minorities. The difference in salaries paid to public and proprietary graduates was now significant ($p<.012$)--public graduates earned $112.50 per week and proprietary graduates earned $116.75.

Change in Earnings on First Job: Table 97 shows there was not a significant difference in the change in earnings between clerk-typists and secretaries, although it approached significance. [illegible]

TABLE [illegible]

SECRETARIAL GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON FIRST JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of job	Secretary	Part-typist	Is the relationship significant?
First earnings (age, region, job tenure, earnings while in school)	$[illegible]	$[illegible].75	Yes******
Last earnings (age, region, job tenure	$120.[illegible]	$111	Yes*
Change in earnings (age, region, job tenure)	$ 14.75	$15.25	No

Ethnicity	White	Other	Is the relationship significant?
First earnings (age, region, job tenure, earnings while in school	$[illegible].50	$[illegible].75	Yes*****
Last earnings (age, region, job tenure)	$[illegible]A	$[illegible].50	Yes******
Change in earnings (age, region, job tenure	$ 15.25	$ [illegible].75	Yes***

Type of school	[illegible]	Proprietary	Is the relationship significant?
First earnings (age, region, job tenure, earnings while in school)	$[illegible].75	$[illegible]	No
Last earnings (age, region, job tenure	$ [illegible]	$[illegible].75	Yes*****
Change in earnings (age, region, job tenure	$ [illegible]	$ [illegible].75	No **

*[illegible]
**[illegible]
***[illegible]
****[illegible]
*****[illegible]
******[illegible]

Promotions: Although there was no difference in the number of promotions between public and proprietary graduates (after controlling for job tenure and age), Whites got significantly more promotions ($p<.005$) than ethnic minorities, and clerks got significantly more promotions than secretaries ($p<.015$). See Table 98 .

TABLE 98

SECRETARIAL PROMOTIONS BY TYPE OF JOB
(controlling for respondents' job tenure, age)

Secretary	Clerk-typist
1.43 (203)	1.57 (127)

b. Job Changers

Twenty-two percent (13) of the public graduates changed jobs--about half clerks and half secretaries. Eighty-five percent were white. Only one clerk became a secretary, and two secretaries became clerks.

Thirty-one percent (85) of the proprietary graduates changed jobs. Eighty-one percent were white. Seventy-three percent of the changers were secretaries, most of whom took other, higher-paying secretarial jobs.

Of those who changed jobs, proprietary graduates began at significantly ($p<.016$) higher salaries, after controlling for last earnings on first jobs, region, and age. Public graduates started at $108.50 and proprietary grduates at $113.50 at their new jobs. Their final earnings were also significantly ($p<.02$) different, with public graduates earning $110.50 and proprietary graduates $126.50 per week.

c. The Sample as a Whole

First Earnings on Current Job: When we put those who had had only one job together with those who had had more than one job, we found from Table 99 that clerk-typists still earned significantly less than secretaries ($p<.001$). There was not a significant difference in earnings between Whites and other ethnicities, but proprietary graduates were still earning more than their public counterparts.

Final Earnings on Current Job: Secretaries made significantly ($p<.007$) more than clerk-typists, and there was a non-significant trend for Whites to earn more than ethnic minorities. Public graduates earned significantly ($p<.001$) less than proprietary graduates.

Changes in Earnings on Current Jobs (Controlling for Age, Region, Job Tenure, and First Earnings): If everyone had earned the same to begin with, the secretaries would have gained a little more than the clerk-typists, but the difference would not have been significant. Whites gained significantly more than other ethnicities, and proprietary graduates gained a little more than the public graduates, but the difference was not significant.

Unemployment: Eleven percent of the public and two percent of the proprietary graduates reported they had never had a full-time job. Among those who did have jobs, there was no significant difference in the number of times they were unemployed, whether they were Whites or ethnic minorities, clerks or secretaries, or from public or proprietary schools. However, after controlling for the number of times unemployed, age, and job tenure, the public graduates' unemployment lasted, on the average, almost twice as long as proprietary graduates'--and that difference was significant ($p<.001$).

2. Nonoccupational Experiences of Secretarial Graduates

Personal Growth: We found no significant differences in ego-development, reading, or voting behavior. Public graduates returned to school significantly ($p<.006$) more than proprietary (37 percent of public and 22 percent of proprietary). Most returning graduates were clerks, and they enrolled for more occupational courses.

Expectations: There were no significant differences in salary or educational expectations between clerks and secretaries, or public and proprietary graduates.

Perceptions of the Adequacy of Training: Table 100 shows that those in jobs for which they were trained rated their training as significantly ($p<.007$) more adequate than those in the lower level, clerical jobs. Whites rated their training as significantly ($p<.014$) more adequate than [illegible] did. Although public graduates were placed in

TABLE 33

SECRETARIAL GRADUATES' FIRST, LAST AND CHANGE IN WEEKLY EARNINGS ON CURRENT JOB BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of Job	Secretary	Clerk-Typist	Is the relationship significant?
First Earnings (age, region, job tenure)	$11[illegible].25	$102	Yes***
Last Earnings (age, region, job tenure)	$1[illegible].4	$118	Yes **
Change in Earnings (age, region, job tenure, and first earnings)	$ 1[illegible].75	$ 14.25	No

Ethnicity	White	Other	Is the relationship significant?
First Earnings (age, region, job tenure)	$109.25	$ 99.50	No
Last Earnings (age, region, job tenure)	$125.25	$115.75	No
Change in Earnings (age, region, job tenure, and first earnings)	$ 16.75	$ 14.75	Yes*

Type of School	Public	Proprietary	Is the relationship significant?
First Earnings (age, region, job tenure)	$[illegible]	$1[illegible].7[illegible]	Yes**
Last Earnings (age, region, job tenure)	$11[illegible]	$1[illegible]6	Yes***
Change in Earnings (age, region, job tenure, and first earnings)	$ [illegible]	$ [illegible]5	No

*[illegible]
**[illegible]
***[illegible]

low-level jobs more frequently than proprietary graduates, and generally earned less, they rated their training as being significantly ($p < .01$) more adequate than their proprietary counterparts.

TABLE 100

SECRETARIAL GRADUATES' PERCEPTION OF ADEQUACY OF TRAINING BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Secretary	Clerk-typist
Public	1.58 (34)	1.68 (25)
Proprietary	1.84 (170)	2.22 (101)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

Satisfaction with Earnings: The average rating for the entire sample was 1.81, or a little more than "somewhat satisfied." Whites were significantly more satisfied ($p<.019$) than those of other ethnicities, and there was no difference between the public and proprietary graduates' satisfaction with earnings.

Satisfaction with the Job: The average rating for the entire sample was 1.46, a little lower than the top rating of "very satisfied." There were no differences by ethnic group, public or proprietary school attendance, or type of job.

Satisfaction Overall: The average rating for overall satisfaction from the whole sample was 1.46. There were no overall differences by ethnic background, job category or type of school, but there was an "interaction" between ethnic background and type of school on satisfaction, shown in Table 101. Table 101 shows that ethnic minorities were more satisfied than their white counterparts if they had gone to a public school, but less satisfied than whites if they had gone to a proprietary school. Although the public ethnic minority cell was small (8), the interaction was significant ($p < .048$).

TABLE 101

SECRETARIAL GRADUATES' OVERALL SATISFACTION BY TYPE OF SCHOOL AND ETHNIC GROUP

	White	Other Ethnicity
Public	1.48 (44)	1.13 (8)
Proprietary	1.45 (212)	1.53 (34)

Key: 1 = Very satisfied
2 = Somewhat satisfied
3 = Somewhat dissatisfied
4 = Very dissatisfied

When we asked the graduates if they had the choice to make again, would they choose the same school, we found that those in clerk-typist jobs responded the same as those in secretarial jobs. But Whites (80) responded they would repeat their choices, and only 62 percent of the ethnic minorities responded they would--a difference significant at the $p<.005$ level. Even though the ethnic minorities from proprietary school were placed in secretarial jobs more frequently, and even though proprietary graduates earned significantly more, only 75 percent of them said they would choose the same school again, compared to 93 percent of the public sample. The difference was significant at the $p<.005$ level.

3. Institutional Characteristics.

The average public program lasted 19 months and cost the graduate $324. The average proprietary program lasted 13 months and cost the graduate $2383. Neither program length nor cost was associated with the type of job graduates got after school or with their earnings.

Age and Size: Proprietary schools were significantly ($p<.001$) older than public schools. Proprietary schools' average age was 71 years old, and the publics' only 12. Proprietary schools were significantly smaller ($p<.001$), with the average public school enrolling 2772 students, and the average proprietary school enrolling [illegible]. Table 102 shows a [illegible] relationship ($p<$[illegible]) between school size and type of school.

and type of job. Public graduates that got secretarial jobs went to smaller schools, and proprietary graduates that got secretarial jobs went to larger proprietary schools.

TABLE 102

SECRETARIAL GRADUATES' AVERAGE SCHOOL SIZE BY TYPE OF JOB AND TYPE OF SCHOOL

Type of School	Secretary	Clerk-typist
Public	2437 (33)	3652 (26)
Proprietary	334 (170)	328 (101)

Teaching Load: The average public graduate went to a school where teachers taught 16 hours per week. The average proprietary teaching load was 23 hours per week. There was no association between teaching load and the graduates' success for the public schools. Graduates from proprietary schools where teachers taught the most, earned the most--a significant association ($p<.001$).

Teachers' Salaries: The average public secretarial teacher was paid $13,500 (for a 9-month contract), and the average proprietary teacher was paid $11,600 (for a 12-month contract). Table 103 shows a significant interaction ($p<.02$) between teachers' salaries (controlling for regional differences), type of school, and type of graduates' job. Proprietary schools that placed their graduates in secretarial jobs paid their teachers more, and public schools that placed their graduates in secretarial jobs paid their teachers less. This association holds when we analyze teachers' salaries by graduates' first earnings, controlling for regional differences and respondents' age and earnings while in school.

Teachers' Age: The average public teacher was 38 years old, and the average proprietary teacher was 34 1/2. There was no association between the public teachers' ages and the success of their graduates, but we found a significant ($p<.001$) association between the proprietary teachers' ages and their graduates' success. The youngest teachers' students earned the most, and the oldest teachers' students earned the least, after controlling for the respondent's region, age, and earnings while in school.

TABLE 103

AVERAGE TEACHERS' ANNUAL SALARY BY TYPE OF SECRETARIAL GRADUATES' JOB AND TYPE OF SCHOOL
(controlling for region)

Type of School	Secretary	Clerk-typist
Public	4.03 (32)	4.35 (26)
Proprietary	3.68 (169)	3.35 (98)

Key: 1 = Up to $7000
2 = $7001 - $10000
3 = $10000 - $13000
4 = $13000 +

Even though the proprietary graduates' training costs just one percent more and even though the proprietary graduate earned more in the labor market after graduation and was equally satisfied with her job and earnings, she rated her training significantly ($p<.007$) less adequate. Why? Because she paid for school charges out of her own pocket while the public graduate's training was heavily subsidized by tax money. Only 75 percent of the proprietary graduates (who paid seven and one-half times as much for their educations) would return to the same school, while 93 percent of the public graduates claimed they would repeat their choice.

4. Costs to the Student.

Although the direct charge of the school to the proprietary graduate was $[illegible], and the public only $324, there was a one percent difference in the total cost of training to the student, as Table 104 shows.

Public and proprietary costs to the student were virtually the same, even though the proprietary graduate paid almost 7 1/2 times as much to her school in direct charges. If we added in the public subsidy paid to the public schools in taxes (we reported in Chapter 3 that proprietary teaching costs were 35 percent less than public), the total public cost would probably exceed the proprietary cost.

TABLE 104

COSTS OF SECRETARIAL TRAINING TO THE GRADUATE, BY TYPE OF SCHOOL

	Public	Proprietary
Potential Earnings (unadjusted weekly earnings less 10 X weeks in school)	$7287	$5178
-less-		
Earnings while in School (unadjusted weekly earnings X weeks in school)	- 410	- 280
-equals-		
Foregone Earnings	$6877	$4898
-plus-		
Program Charges to the Student	$ 324	$2383
-equals-		
Total Costs to the Student	$7201	$7281

II. Cosmetology Graduates' Experiences after School

A. SUMMARY

Our hypothesis was not confirmed on cosmetology graduates. Of the entire all-female sample, 81 percent found cosmetology jobs after graduation. The other 19 percent got jobs that were mainly clerical, although there were waitresses, assemblers, and even a religious worker in that group. The public graduates were younger and had higher socioeconomic status (SES); fewer were ethnic minorities. The only background characteristic that was related to earnings was ethnicity; Whites earned more.

We also found:

- Although the proprietary graduates got cosmetology jobs a little more often, there was a non-significant trend for them to earn less than public graduates. The lower earnings reflected the higher percentage of ethnic minorities in the proprietary sample. Also, public graduates took "other" jobs more often that paid higher salaries. Our calculations do not take tips into account.

- Thirty-eight percent of the public and 51 percent of the proprietary graduates who reported full-time employment changed jobs. The job changers were mostly white cosmetologists who stayed in the same field. The higher salaries of the proprietary graduates who changed jobs increased the total proprietary sample's salaries and almost closed the salary gap with the public graduates.

- There were no significant differences in either the incidence or length of unemployment between the public and proprietary graduates who worked full time after graduation. However, 18 percent of the public and 2 percent of the proprietary graduates did not get jobs after graduation. Eighty-four percent of the proprietary graduates who had never found a job were ethnic minorities.

- There were no significant differences in the public and proprietary graduates' personal growth.

- Public graduates expected to earn more in the long run, and more public graduates expected to continue their education.

- There were no significant differences between the public and proprietary graduates' satisfaction with earnings, their jobs, or satisfaction overall.

- The public graduates rated their training significantly more adequate ($p < .001$) than proprietary graduates did. Ninety-five

percent of the public graduates would choose the same school again, and 75 percent of the proprietary graduates said they would.

- The average public program lasted 12 months and cost the student $9. The average proprietary program lasted 9 months and cost the student $417.

- The costs of training averaged $776 for the public graduate, and $879 for the proprietary graduate. Two factors made the costs almost comparable, although the public schools were heavily subsidized:

  a) proprietary programs were shorter, so the students gave up less earnings; and

  b) fees paid by clients for having their hair done defrayed training costs.

- Proprietary programs were smaller and their teachers were younger, paid less, and worked more than public school teachers.

- There were no significant relationships between public school characteristics and their graduates' success.

- Successful proprietary graduates went to larger schools (by proprietary standards) where the average teaching load was low (but higher than the average public teaching load) and where teachers were either young or old and paid more.

B. DETAILED ANALYSIS

We surveyed graduates of four public and 13 proprietary schools that trained people in cosmetology (U. S. Census Code 944). Table 105 shows that we completed NOPC interviews with 84 percent of the public and 70 percent of the proprietary graduates from school years 1970-71 and 1972-73. The graduating classes and the sample of graduates we located showed a similar ethnic makeup, so the 26 percent of the proprietary sample we could not find does not bias our sample ethnically.

[illegible]

Table 106 summarizes the labor market activity of the cosmetology sample.

TABLE 106

DISTRIBUTION OF COSMETOLOGY GRADUATES' BY LABOR MARKET ACTIVITY AND TYPE OF SCHOOL

	Public	Proprietary
Unemployed (never had a full-time job)	20	55
Working part-time	5	8
Working full-time	87	176
Total[a]	112	239

[a]The numbers do not total 382 because 31 men were deleted from the analysis because of their small number.

The majority of women trained as cosmetologists got jobs as cosmetologists, as table 107shows.

TABLE 107

DISTRIBUTION OF COSMETOLOGY GRADUATES BY TYPE OF FIRST JOB

Cosmetologist	Other
81 (214)	19 (49)

The 'other' category covers all jobs not in cosmetology. Most women in the "other" category were clerks--bookkeepers, cashiers, typists--although that group included waitresses, asserblers, and one religious worker. Table 108 shows that job classification was significantly associated ($p<.009$) with the respondents' first earnings after controlling for job tenure, age, region, and earnings while in school.

TABLE 108

COSMETOLOGY GRADUATES' FIRST WEEKLY SALARY ON FIRST JOB BY TYPE OF JOB
(controlling for respondents' job tenure, age, region and earnings while in school)

Cosmetologists	Other
$56 (214)	$63.75 (49)

As table 108 shows, women in jobs unrelated to their training earned significantly ($p<.009$) more than those who took jobs as cosmetologists.

Were there significant differences in the public and proprietary graduates' background characteristics, and were those characteristics associated with their first earnings? Table 109 shows that public graduates came from families with significantly higher socioeconomic status ($p<.01$). Significantly more often, they were white ($p<.002$), and they were significantly ($p<.003$) younger than proprietary graduates. However, table 109 also shows that the only background characteristics that affected earnings were educational status (those with higher educational status earned more) and ethnic background (Whites earned more). There was not a significant difference in educational status between public and proprietary graduates. Because there was a difference in ethnic background, we have displayed earnings for Whites and other ethnicities separately.

TABLE 109

RELATIONSHIP OF BACKGROUND CHARACTERISTICS TO TYPE OF SCHOOL AND FIRST WEEKLY SALARY
(controlling for respondents' job tenure, region and earnings while in school)

	Are background characteristics different between public and proprietary graduates?	Are background characteristics significantly associated with first salary?
Socioeconomic status	Yes**	No
Father's occupation	No	No
Educational status	No	Yes*
Ego development	No	No[a]
Age	Yes***	No
Ethnic background	Yes****	Yes****

[a]Although ego development was not associated with first salary, it was significantly ($p < .05$) associated with final salary--those with the lowest ego levels made least, and those with medium ego levels made most. Those with the highest ego levels made medium salaries.

*p .026

**p [illegible]

***p [illegible]

****p [illegible]

[illegible] of the public graduates and [illegible] percent of the proprietary graduates were working full time while they were in school, so we controlled for job tenure when we looked at earnings. Although [illegible] was not significantly related to earnings, we controlled for it to adjust for [illegible].

1. Careers of Cosmetology Graduates

a. First Job

The average cosmetology graduate took one month, 11 days to find her first job. There was no difference between public and proprietary school graduates. As table 110 shows, proprietary schools placed their graduates in cosmetology jobs a little more often, but the difference was not statistically significant.

TABLE 110

COSMETOLOGY GRADUATES' TYPE OF FIRST JOB
BY TYPE OF SCHOOL

Type of School	Cosmetologist	Other
Public	78% (68)	22% (19)
Proprietary	83% (146)	17% (30)

We asked the graduates if their first jobs were related to their training, and five percent of the women in 'other' jobs responded, 'Yes.' One hundred percent of those in cosmetology jobs said,"Yes." The same pattern held for both public and proprietary graduates.

First weekly Salary on First Job. Table 111 shows those in other jobs earned significantly more ($p<.01$) than cosmetologists, and whites made a little less than ethnic minorities. There was a non-significant trend for proprietary graduates to earn less ($55.50) compared with public graduates' weekly salaries of $61.50 per week.

Last weekly Salary on First Job. Table 111 shows the gap in salaries between cosmetologists and women in other jobs widened further ($81.50 compared to $71.15), a significant difference ($p<.001$). The

TABLE III

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	$[illegible]	$[illegible]	[illegible]**
[illegible]	$[illegible]	$[illegible]	[illegible]****
[illegible]	$[illegible]	[illegible]	[illegible]****

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	$[illegible]	$[illegible]	[illegible]
[illegible]	$[illegible]	$[illegible]	[illegible]***
[illegible]	$[illegible]	$[illegible]	[illegible]****

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	$[illegible]	$[illegible]	[illegible]
[illegible]	$[illegible]	$[illegible]	[illegible]
[illegible]	$[illegible]	[illegible]	[illegible]

[illegible]

* [illegible]

** [illegible]

*** [illegible]

**** [illegible]

salary change was also significantly different ($p<.001$)--women in other jobs gained $27 per week, but cosmetologists gained only $14.50. Whites had significantly higher ($p<.006$) weekly salaries than ethnic minorities, and they also gained significantly ($p<.001$) more between first and last salaries ($22 per week compared with $10.75 per week for other ethnicities). The difference between public and proprietary graduates was significant ($p<.044$), with the public graduates earning weekly salaries of $80.50 and proprietary graduates earning $70.75. Fifty-nine percent of the proprietary sample were ethnic minorities compared with 41 percent of the public sample. Ethnic minorities earned less, which depressed the salaries of the proprietary sample as a whole.

b. Job Changers

Thirty-eight percent of the public and 51 percent of the proprietary graduates changed jobs. Most job changers were cosmetologists (80% of the public and 92% of the proprietary), and most of them stayed in cosmetology jobs. There were no significant differences between the public and proprietary graduates' first or last salaries on their new jobs, but there was a significant ($p<.001$) change between first and last salaries for cosmetologists and women in other jobs. Cosmetologists gained $13.75 per week, while women in other jobs gained only $2.50 per week from changing jobs. Because more of the women who changed jobs and increased their salaries were Whites from proprietary schools, the difference between the public and proprietary graduates' salaries narrowed to the point where it was no longer significant.

c. The Sample as a Whole

Table 112 shows the salaries for our three subgroups on their current jobs, whether they were their first or subsequent jobs.

First Salary on Current Job. Because of the women who changed jobs (mostly white cosmetologists from proprietary schools) we no longer found a significant difference between the [illegible] graduates in cosmetology and other jobs. Women in other jobs earned slightly more ($69.25 per week compared to $67 per week for cosmetologists). The higher salaries of the job changers, most of whom were white, reversed the order of salaries. Whites earned more than ethnic minorities, although the difference was not significant. However, the job changers decreased the gap in salaries between public and proprietary graduates, to the point where there was not a [illegible]

TABLE 13.

[illegible] BY TYPE OF JOB, ETHNICITY AND TYPE OF SCHOOL

Type of job	Cosmetologists	Other	Is the relationship significant?
First salary age, region, job tenure	$[illegible]	$[illegible]	No
Last salary age, region, job tenure	$[illegible]	$[illegible]	Yes***
Change in salary age, region, job tenure and first salary	$[illegible]	$[illegible]	Yes***

Ethnicity	White	Other	Is the relationship significant?
First salary age, region, job tenure	$[illegible]	$[illegible]	No
Last salary age, region, job tenure	$[illegible]	$[illegible]	Yes*
Change in salary age, region, job tenure and first earnings	$[illegible]	$[illegible]	Yes**

Type of school	Public	Proprietary	Is the relationship significant?
First salary age, region, job tenure	$[illegible]	$[illegible]	No
Last salary age, region, job tenure	$[illegible]	$[illegible]	No
Change in salary age, region, job tenure and first earnings	$[illegible]	$[illegible]	No

[illegible]
*
**
***

on increasing tips to augment their income as they built up their clientele, but we can only speculate. Table 112 shows the gain in salaries between these two groups was significant also ($p<.001$).

Whites' salaries were significantly greater ($p<.039$) than other ethnicities'--$88.50 per week compared to $79.75 per week.

The gap between the public and proprietary salaries was no longer significant. Public graduates were earning $88 per week compared to proprietary graduates' $82.75. The difference between first and last salaries was not significant either.

Unemployment. We found no significant differences in the frequency or duration of unemployment for cosmetologists and women in other jobs, whites and ethnic minorities, or public and proprietary graduates.

Twenty-one percent of the proprietary and 16 percent of the public sample never had had a full-time job. In many of the other occupations, those who were not working went back to school, but virtually none of the unemployed cosmetologists did. They were either keeping house or looking for work. Total unemployment fell rather hard on the least advantaged of the cosmetology graduates. The average cosmetology graduate had a high school diploma from a general/vocational program, but the average cosmetology graduate who did not get a full-time job was more likely a high school dropout. Furthermore, as Table 113 shows, unemployment fell hardest on women from ethnic minorities who went to proprietary schools.

TABLE 113

COSMETOLOGY GRADUATES WHO REPORTED NEVER HAVING A FULL-TIME JOB SINCE GRADUATION BY ETHNIC BACKGROUND AND TYPE OF SCHOOL
(in percents)

Type of School	White	Other
Public	50 (10)	50 (10)
Proprietary	16 (9)	84 (45)

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Nonoccupational ... ment ... Graduates

Personal Growth. Although we found no significant difference in ego development between the public and proprietary graduates, we did see a significant difference in ... behavior and continued education. Fifty-... percent of the public ... and only 32 percent of the proprietary graduates ... voting ... the ... presidential election (after controlling for age), and ... percent of the public but only 20 percent of the proprietary graduates ...

We reported earlier that public graduates had higher SES, although SES was not related to earnings. The public sample, which also had fewer ethnic minorities, probably ... went back to school more often because of ... relatively ... advantaged backgrounds rather than because of their ... general education.

Expectations. There was no difference ... the public and proprietary graduates' salary expectations in the short run. However, we found public graduates expected to earn significantly ($p < .005$) more than their proprietary counterparts six to ten years after graduation.

Public graduates expected to earn $10,300 per year, and proprietary graduates only $9,621. We also found a significant difference in educational expectations ($p < .001$). Fifty-... percent of the public graduates expected to get a higher degree, but ... of the proprietary graduates did. The average public ... expected to earn a degree midway between an associate ... but the average proprietary graduate (who had lower ... status) expected a degree midway between a bachelor ... graduate degree. Given the occupational and educational ... of the proprietary graduates, these expectations were ... perhaps reflected wishes more than ... tations.

Satisfaction.

a. Satisfaction with earnings. ... average ... satisfaction score for the entire ... was ... somewhat satisfied. There were no differences between whites ... other ethnicities or public and proprietary graduates. There was a significant difference

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[illegible] log [illegible] p<.02) [illegible] women in other jobs [illegible] were more satisfied [illegible] 3--a little higher than "somewhat satisfied"-- than women in other jobs who had an average satisfaction score of 2.16, a little lower than "somewhat satisfied."

This finding was [illegible] because women in jobs other than cosmetology earn [illegible] than cosmetologists. Because earnings satisfaction and actual [illegible] were [illegible] highly correlated in the other five occupations, [illegible] cosmetologists were actually earning more than women in other [illegible] salaries were lower but they made up the difference [illegible].

[illegible] Satisfaction with [illegible] Itself. The average score for the entire sample [illegible] way between "very satisfied" and [illegible] satisfied [illegible] other ethnicities were [illegible] satisfied, and there [illegible] significant trend for public graduates to [illegible] more satisfied [illegible] working as cosmetologists were significantly [illegible] .04) [illegible] satisfied [illegible] --midway between "very" and [illegible] satisfied") than [illegible] in other jobs (1.69)--closer to "somewhat satisfied").

[illegible] Satisfaction Overall. The average score for the entire sample [illegible] 1.77 (a little [illegible] somewhat [illegible] than "very" satisfied). White [illegible] significantly [illegible] satisfied than other ethnicities, and [illegible] difference [illegible] public and proprietary graduates. [illegible] working as cosmetologists [illegible] (p<.023) [illegible] satisfied [illegible] midway between very and somewhat satisfied) than women working in other [illegible] slightly higher than "somewhat satisfied").

Graduates' Perceptions of the Adequacy of Training. We found no difference [illegible] the way [illegible] the adequacy of training between ethnic [illegible] in cosmetology [illegible] jobs. However, public graduates rated their training significantly (p<.001) higher [illegible] proprietary graduates. The average public graduate said her training [illegible] between "very good" and "excellent." The average proprietary [illegible] response was between "good" and "very good."

When asked if they would [illegible] the same school again, 91 percent of the public graduates said they would, and 75 percent of the proprietary graduates said they would, [illegible] significant at the p<.001 level.

3. Relationship of Institutional Characteristics to Graduates' First Earnings

The average public program [illegible] one year and cost the student [illegible]59, and the average proprietary [illegible] lasted nine months and cost the student $412. [illegible] lower (compared to other short programs like secretarial training) because clients paid to have their [illegible] by teachers [illegible] students, which defrayed the [illegible] cost.

The average public school offering cosmetology was older (40 years), compared to the average proprietary school (21 years). Public schools were, on the average, 120 times the size of proprietary schools. Public schools enrolled 11,651 students, compared to 94 for the proprietary. As we reported in Chapter 3, proprietary teachers were paid less and worked longer hours than their public counterparts.

We found no associations between characteristics of public schools and the success of their graduates. However, proprietary graduates who earned most went to schools where teachers taught fewer hours each week. See table 114.

TABLE 114

PROPRIETARY COSMETOLOGY GRADUATES' FIRST WEEKLY SALARIES BY TEACHERS' AVERAGE WEEKLY TEACHING LOAD
(controlling for respondents' age, region and earnings while in school)

Average weekly teaching load	Proprietary cosmetology graduates' first weekly salary (age, region, job tenure, and earnings while in school)
35-38 hours per week	$64.50
40 hours per week	$54.25

The difference was significant ($p<.019$).

There were also non-significant trends for graduates who earned the most to have gone to larger schools with young or old teachers who were paid more. Graduates who had middle-aged teachers earned the least.

4. Costs to the

Table 115 shows the breakdown of costs of training for public and proprietary graduates.

TABLE 115

COSTS OF COSMETOLOGY TRAINING BY TYPE OF SCHOOL

	Public	Proprietary
Potential Salary (unadjusted weekly salary less 10 X weeks in school)	$3198	$2164
-less-		
Salary while in School (unadjusted weekly salary X weeks in school)	-2431	-1697
-equals-		
Foregone Salary	$ 767	$ 467
-plus-		
Program Charges to the Student	+ 9	+ 412
-equals-		
Total Costs to the Student	$ 776	$ 879

In this comparison, the costs to the student [illegible] for two main reasons.

1) the proprietary programs were 25 percent shorter, on the average, than the public programs, which lowered foregone earnings, and

2) the school charges to the student were relatively low, because training costs were partly offset by clients who paid the school to have their hair done.

If the public sample had included as many ethnic minorities (who earned less) as the proprietary, the gap would have been even closer.

From the student's point of view, proprietary schools were a little more profitable, but not much

Chapter 6

CONCLUSIONS AND IMPLICATIONS

We organized the study around the concept that public and proprietary schools are distinctly different from each other. Proprietary schools are rooted in the marketplace and survive only if their income from students exceeds their training expenses. Public schools are politically governed and depend ultimately on political support for their survival. We reasoned that proprietary schools should train more effectively for specific jobs, which led to our central hypothesis:

> After controlling for differences in the backgrounds of graduates of public and proprietary schools, proprietary graduates will have more success in the labor market than graduates of public schools.

We tested this hypothesis by analyzing the labor market experiences of [illegible] graduates of [illegible] randomly-chosen schools in four large metropolitan regions, in six different, large, and fast-growing occupations.

Do Graduates of Public or Proprietary Schools Do Better?

Our hypothesis was not confirmed. With few exceptions, graduates of public schools had about the same success in the labor market as graduates of proprietary schools. The graduates who had more [illegible] and less unemployment generally earned more, so in this [illegible] we use earnings as an indicator of success.

[illegible] background differences [illegible] such as [illegible]. The characteristics [illegible] background, [illegible]

[illegible]

for those measured differences that were consistently related to occupational success. We controlled either by entering those variables into the analysis of variance as covariates (such as a respondent's age, earnings while in school, region and job tenure), or by displaying groups with differences (women and ethnic minorities) separately.

To fully understand whether graduates of public or proprietary schools did better, we had to know what background characteristics accounted for occupational success and how they were distributed between the public and proprietary samples.*

One major determinant of earnings was a person's ethnic background. For five of the occupations, Whites earned an average of 8.24 percent more than other ethnicities in the same jobs. However, in the dental assisting sample, that pattern reversed itself and ethnic minorities earned an average of 2 percent more than Whites in comparable jobs. We will discuss that finding later.

Another determinant of earnings was sex. Nationally, women earned 38 percent less than men. In our study, two occupations had both men and women. Women who trained for accounting all became clerical workers and earned 23 percent less than men in the same job classification. All but a handful of the women who trained for computer programming became clerical workers and earned 16 percent less than men in the same occupational classification. Two factors explain why the gap between men's and women's earnings was less in our study than nationally:

1. Nationally, more women are on the lower end of the occupational hierarchy and earn less. Our calculations were based on men and women in the same job classification.

2. National figures are based on median earnings for all fully employed workers, most of whom are older than respondents in our sample. The gap between men's and women's earnings increases as men and women get older because of simple discrimination and, some maintain, because more women are "intermittent" workers, who quit jobs for child-rearing.

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*Technical Note: Some people will want to know for example whether a person's sex or ethnic background is a more important determinant of earnings. Our sample was designed to test a principle across a wide variety of geographic locations, occupations, and schools--not to generalize to all public and proprietary schools in the country. We used analysis of variance that indicates significant associations rather than an analysis that gives the order of these associations, which we feel would have been an excessive refinement.

Table 116 shows the significant differences in graduates' average first weekly earnings on their first jobs, the amount of those differences, and whether the difference favors public or proprietary graduates. Table 117 gives the same information for the graduates' last earnings on their current jobs.

When we compared the average earnings of the public and proprietary accounting graduates, we found that the proprietary graduates earned a little more (see table 44). But the difference was not "significant," which means the difference in earnings may have been produced by chance for three reasons:

1. The sample was too small to get reliable results consistently,
2. the difference in earnings was too small and could not be considered reliable, or,
3. graduates' earnings varied considerably above and below this average, making the difference unreliable.

We constructed the sample large enough to avoid Type II Errors (reporting a finding as "not significant" when it is). The power in our F and t-tests was partly due to the large sample. Therefore, the lack of "significant" differences in tables 116 and 117 meant either that the difference in earnings was very small, or there was wide variation from the average, or both. So, with the accountants, for example, we cannot reliably say the proprietary graduates earned more than the public. Therefore we have shown only those differences that were statistically significant. As we summarized each occupation, we paid particular attention to factors that helped produce or reduce differences in earnings.

Accountants: There were not significant differences in the public and proprietary graduates' earnings, although the average proprietary graduate earned a little more at first and a little less when we made the survey. Only two out of ten graduates got jobs as accountants or related jobs. The rest became clerks or took unrelated jobs. No women got accounting jobs; they all became clerks. The proprietary sample had fewer women and ethnic minorities, which gave the group an advantage in earnings, but proprietary schools also placed twice as many graduates in accounting and related jobs, which raised the earnings for the group.

Programmers: There were not significant differences in the public and proprietary graduates' earnings, although the public graduates got higher-level jobs significantly more often (see table 61). Only 14 out of 100 graduates got programming or related jobs, and the rest took clerical or low-level, unrelated jobs. Twenty-seven out of 100 public graduates and 20 out of 100 proprietary graduates got programming and related jobs. The public sample's higher proportion of women and the proprietary sample's higher proportion of ethnic minorities (both of which depressed earnings) offset each other. Even though the graduates had been out of school three years, none of the [illegible] in the clerical job category had moved into [illegible]

TABLE 11t

DIFFERENCES IN GRADUATES' AVERAGE FIRST WEEKLY EARNINGS ON FIRST JOB BY OCCUPATIONAL PROGRAM AND TYPE OF SCHOOL

(controlling for respondents' age, region, job tenure and earnings while in school)

Occupational Program	Are average weekly earnings on first job significantly different?	How much different?	Who does the difference favor?
Accounting	No		
Programming	No		
Electronic technician	Yes*	$10 per week	Public graduates
Dental Assisting	Yes**	$12 per week	Public graduates
Secretary	No		
Cosmetology	No		

Note: earnings have been rounded to nearest dollar

*$p < .025$
**$p < .001$

Electronic Technicians: Only 22 out of 100 graduates got jobs as electronic technicians or jobs of that status. Most graduates got jobs in the lower-status (and lower-paying) craft occupations like television and telephone repairmen. From the relatively high

earnings of men in these jobs and the self-reported relationship of their jobs to training, we concluded there was a high transfer of skills from the higher-level electronic technician training to these lower-status and lower-paying jobs. Many graduates got low status jobs unrelated to their training and, overall, similar proportions of public and proprietary graduates got similar jobs. Although public graduates earned significantly more at first, proprietary graduates closed the earnings gap over time. However, the public sample had more ethnic minorities than the proprietary to depress earnings in the sample as a whole.

Dental Assisting: Most graduates of public and proprietary schools who trained as dental assistants got jobs as dental assistants. Those who took other jobs earned a little more than dental assistants although the difference was not significant. Public graduates earned significantly more than proprietary graduates at first, and when the survey was taken (see tables 116 and 117). Unlike other public occupational programs that accept virtually all applicants, most public dental assisting programs screened their applicants. All Boston area schools and most San Francisco Bay Area schools reported screening. Most public schools required a high school diploma with a minimum grade-point average and some kind of a personality inventory. One dental assisting coordinator from a public school said, "We screen carefully, but still lose 25 to 30 percent of our students before graduation." A San Francisco school that recently began screening insists that a potential student be in good health (a euphemism for not being obese), be able to speak English fluently, and have passed a first-semester science course. We found no evidence to show that proprietary schools screened their applicants as carefully.

Dental assisting was the only occupation in which ethnic minority groups earned more than Whites. We reinterviewed each of the schools to ask for their help in interpreting this unusual finding. Most teachers and administrators said that five years ago they had a hard time placing an ethnic minority graduate in a dental office, but now the situation had reversed itself. One public dental assisting program director summed it up:

> Many of the younger dentists consciously try to employ ethnic minorities--it's just better business to have a well-rounded staff. And those younger dentists pay more than the older ones who are set in their ways. Another reason is that many of our girls who are ethnic minorities go to work for government clinics and they pay more than private offices.

Secretaries: Most women who trained for secretarial jobs got them, although a sizable proportion took clerk-typist jobs. Proprietary graduates got secretarial jobs more often than public

TABLE 117

DIFFERENCES IN GRADUATES' AVERAGE LAST WEEKLY EARNINGS ON CURRENT JOB BY OCCUPATIONAL PROGRAM AND TYPE OF SCHOOL

(controlling for respondents' age, region, and job tenure)

Occupational Program	Are average weekly earnings on current job significantly different?	How much different?	Who does the difference favor?
Accounting	No		
Programming	No		
Electronic technician	No		
Dental Assisting	Yes*	$ 4 per week	Public Graduates
Secretary	Yes**	$10 per week	Proprietary Graduates
Cosmetology	No		

Note: earnings have been rounded to nearest dollar

*p < .035
**p < .001

graduates and, as Table 117 shows, they earned significantly more in the long run. The difference in earnings stems from proprietary graduates who got higher-paying secretarial jobs more often, and from the higher socioeconomic and educational status of proprietary graduates. In Chapter 5 we showed that women with higher educational status usually earned more.

Cosmetology: Most women who trained as cosmetologists became employed as cosmetologists. Even though the proprietary sample had more ethnic minorities, we found no significant difference in the placement rate or earnings of the public and proprietary graduates. Those women who took jobs outside cosmetology earned significantly more, but we did not include tips for cosmetologists which, if they averaged 15 to 20 percent of salaries, would have closed the gap. However, even when we adjusted cosmetologists' salaries to include tips, we found they barely equalled the federal minimum wage.

Do Public or Proprietary Graduates Experience More Personal Growth?

Ego development, our chief measure of personal growth, is a stable measure that does not change radically over time. We administered the test only to graduates of the 1970-71 class, assuming any differences between the public and proprietary graduates' growth would appear in the longer run. We compared the ego levels of the 1973 graduating class and the 1970-71 graduates and concluded there were no differences in personal growth between public and proprietary graduates for any occupational group. Nor did we find consistent differences in reading or voting behavior. Our evidence did show that public graduates went back to school considerably more often than proprietary graduates. Their continued schooling was mostly occupational (usually in the same occupational field as their earlier training). We could not determine from our data whether this behavior stemmed from personality differences between public and proprietary graduates, or whether public schools created a demand for more schooling. Those going back to school were not consistently white or ethnic minority, women or men, with high or low levels of ego development, or in low or high status jobs. Nor was there any difference in earnings betweeen those going back to school and those who did not. We conclude that those going back to school were doing so for economic reasons, not to broaden themselves.

Are Public or Proprietary Graduates More Satisfied?

In two cases, proprietary graduates were significantly less satisfied overall. The proprietary dental assistants' lower satisfaction stemmed from their significantly lower earnings. The proprietary

programming graduates' lower satisfaction was partly due to their lower-level jobs and to the lower proportion of women in the proprietary sample. Women in all occupations were more easily satisfied.

We asked each graduate to rate the adequacy of his or her training and whether they would choose the same school over. Five out of six times, the proprietary graduates rated their training significantly lower than the public graduates did, and in all cases, significantly fewer proprietary graduates would repeat their choice of school. Both public and proprietary graduates rated their training less adequate if they had trained for a professional-level job (accounting, programming or electronic technician) compared with clerical or service occupations (secretary, dental assistant, or cosmetologist) that got higher ratings. This finding is not surprising because only two out of ten people who trained for professional-level jobs ever got them. We think the proprietary graduates rated their training as less adequate and would repeat the school choice less often even if they earned as much or more than their public counterparts, for two reasons. First, proprietary school training was usually more intense and shorter than public school training.

"I did it, I hated it, but I learned something," one proprietary secretarial graduate told us. Maura's comment summarized the feelings of many proprietary graduates. She said she "hated" it because the school program was rote training--over and over and over until she could type 50 words per minute.

We also think proprietary graduates rated their training more harshly and would not repeat their school choice as often because they paid for their training out of their own pockets. As we pointed out in Chapter 5, the proprietary schools' direct school charges ranged from $412 for a nine-month course in cosmetology to $3034 for an 18-month course in electronic technician training. The public school charges ranged from $9 for a one-year course in dental assisting to $368 for a two-year couse in programming. On the average, the proprietary graduate paid about 20 times more out of his pocket for essentially the same job and earnings as the public graduate. We can understand why proprietary graduates--particularly those who trained for professional-level jobs and probably didn't get them--felt less positive about their training, no matter what its actual quality.

Public school graduates who trained for professional-level jobs rated their training lower than those who trained for the lower-status clerical or service jobs. Overall, public graduates rated their training significantly higher than the proprietary graduates did and more would return to their public school if they had it to do over more often than their proprietary school counterparts, even if they earned less.

Are Public or Proprietary Programs Compensatory?

We pointed out that women and ethnic minorities earned less than men or Whites in the same jobs because of labor market discrimination. In the first stage of this study, we analyzed the characteristics and aspirations of public and proprietary students near graduation and found the salary expectations of the less-advantaged proprietary students were equal to the expectations of the more advantaged public students (Wilms, 1973). On this evidence, we suggested that proprietary schools, driven by the profit motive and dependent on the success of their graduates, might compensate for their students' less-advantaged backgrounds by providing well-targeted, intensive training. Now, after analyzing the careers of 2270 graduates, we feel that, with the one exception (dental assisting), neither public nor proprietary schools are compensatory. Women always earned less than men in the same jobs (all other things being equal), and ethnic minority graduates earned less than Whites in five of the six occupations.

Are Certain Kinds of Schools Better than Others?

Public schools were larger and staffed with more middle-aged, better-paid teachers who spent fewer hours in the classroom each week, but we found no relationship between these variables and how well the graduates fared. We were not surprised, because public schools had more resources and their hiring and compensation scales were set up to reward teachers on a relatively uniform basis.

Proprietary schools presented a different picture. When we did find relationships between a school's characteristics and the performance of its graduates, we usually found the most successful graduates had gone to medium to large schools with higher-paid teachers who worked fewer hours. This finding did not necessarily mean a school would get better results simply by increasing teachers' salaries. We interpreted this finding to mean that moderately large schools had more resources and could pay their teachers more. These more successful school provided generally better working conditions than poorer schools, many of which had dwindling enrollments and underpaid teachers. These marginal schools had to eke every ounce of productivity out of their teachers and worked them more hours each week, which set a tone of bare-survival. The subsistence atmosphere may have had subtle effects on the kinds of students who enrolled and their attitudes about success in their own lives that eluded our interviewers.

Is Public or Proprietary Training Cheaper to the Student?

In Chapter 5, we pointed out that proprietary weekly teaching costs were on the average 25 percent less than comparable public teaching costs. Teaching costs, which comprise the single largest expense in [illegible] programs, were [illegible] by the taxpayer in [illegible] proprietary schools. The

proprietary student paid, on the average, 20 times more than the public student for training. By adding the earnings the student gave up while going to school, we arrived at a total cost to the student. Table 118 shows that in the lower-status occupations (cosmetology, secretary, and dental assistant), total costs to the student were almost equal for public or proprietary cosmetology and secretarial training. The costs to the proprietary student were considerably cheaper for dental assisting, even after taking into the account the $1056 direct charge to the proprietary student.

The costs of proprietary training in the lower-status occupations were about equal to or cheaper than public training because charges to the student were less and proprietary programs were considerably shorter, which meant the student gave up less income.

When we made the same comparison with the higher-status occupations (accounting, programming, and electronic technician), we found the total training costs were less for the public student, because direct school charges to the proprietary student were much higher in these occupations than in the lower-status occupations. The proprietary schooling charges were higher partly because the programs were longer.

Many proprietary schools are seeking degree-granting authority and arrangements for transferring their credits to traditional collegiate schools to attract a larger share of the student market. Working from the assumption that the length of a program is related to its quality, state departments of education, regional accrediting bodies, and professional groups usually insist that training programs must be a prescribed minimum length. Responding to these pressures, many proprietary programs lose their distinct quality of short-term intensive training, and become more like public collegiate programs.

In summary, if the public student were not subsidized by taxes and paid the same charge to the school as the proprietary student, the total costs to the student in our six occupations would be almost equal. But, as we pointed out in Chapter 3, public teaching costs averaged 35 percent more than proprietary teaching costs. If the public student paid the entire cost, he would pay more. So proprietary training was a better investment for the student where the programs were designed to last a minimum length of time, reducing the student's foregone income.

Summary of the Study--the Limits of Self-Help

Our system of higher education evolved as a curious blend of rugged individualism and a desire for equal educational opportunities. As a result, we have the most comprehensive system of postsecondary

TABLE 118

AVERAGE TRAINING COSTS TO THE STUDENT BY TYPE OF SCHOOL AND OCCUPATIONAL PROGRAM

	Average school charge to student		Total cost to student (includes foregone income)	
	Public	Proprietary	Public	Proprietary
Accounting	$145	$2933	$4870	$8965
Programming	368	2344	3480	7676
Electronic Technician	345	3024	5650	8769
Dental Assisting	9	1066	4017	2466
Secretarial	324	2383	7201	7281
Cosmetology	9	412	776	879

education in the world. One out of two young people are in some kind of postsecondary school.

The system developed like an organism, becoming more complex and differentiated to meet new needs. California's system includes three tiers--the university, the state university, and the community college systems. A "fourth segment" is now evolving that includes any public instruction given outside formal classroom settings. Proponents of this vastly differentiated system maintain that it is meeting very diverse student needs.

Hansen and Weisbrod (1969), Jencks and others (1972), Katz (1973), and others have produced evidence that indicates this differentiated system maintains and supports class inequalities rather than overcomes them. For example, Hansen and Weisbrod found that students from families with the highest socioeconomic status attended the university. Those with middle socioeconomic status attended the state university system, and those with the lowest socioeconomic status were most likely to go to a community college. They also pointed out that because of regressive taxation, the poor were paying proportionately more for the elite university system than the wealthy. Karabel (1972) and Clark (1960) have shown that, within this system, the least advantaged student is likely in the lowest rung of this system--the occupational or vocational programs.

The average graduate in our study came from a family where the combined unadjusted parental income was about $9600 yearly. Typically, both parents were high school graduates and the father was employed in a low-status white or blue-collar job.

Our findings contradict a popular conventional wisdom that has the single-purpose proprietary schools attracting the most able, highly motivated students, leaving the more comprehensive public community colleges to deal with the least able, unmotivated student. We found the proprietary student brought fewer resources to school with him. He was more likely a high school dropout or graduate of a low-status general or vocational program. Also, the student who found his way into and graduated from a proprietary school was more likely from an ethnic minority group and his verbal skills lagged behind his public school counterpart at graduation.

We found that while proprietary schools attracted more students with low ego levels, there was no difference between the public and proprietary students at graduation. Our data did bear out that the proprietary student went to school more intensely and was more concerned with job success after graduation, but these factors were

not strong enough to produce significant differences in the achievement motive between the two samples. Rather, respondents chose their schools for other reasons. We found a clear tendency for the least advantaged student not to attend the nearby inexpensive community college or technical school, but instead to choose the relatively expensive proprietary school. If the public postsecondary schools are the latest evolution in an already highly differentiated system, why aren't they attracting the students for whom they presumably were designed?

One reason is that public schools, when compared with proprietaries, look like extensions of the academic middle-class public secondary school system which many new students choose not to, or cannot, relate to. As we reported last year, public postsecondary schools often recruit their faculties from elementary and secondary schools (Medsker, 1960), which, according to Katz et al. (1973), gives the public schools a distinct middle-class flavor. In this same article, Katz and his associates analyze socioeconomic characteristics of the population of a California city and conclude the local community college did not recruit the segments of the population with the fewest resources. They write, "The middle income groups dominant in the administration and faculty of the public junior colleges constitute its student body as well." Katz concludes the public junior college is more a bulwark for the middle class than a channel of mobility for the entire community. Anderson, Bowman, and Tinto (1972) also conclude that community colleges have not yet reached the nation's lower classes.

People who lack middle-class advantages, particularly if they are from ethnic minorities, tend not to participate in middle-class institutions. Recruitment patterns of the schools in the study emphasize this point dramatically. The predominantly middle-class students in public schools tended to come from high-status college preparatory programs and had superior verbal skills.

While a student's background was related to the kind of school he chose, we found only a limited relationship between those characteristics and his ultimate success or failure in his career. Family background has only a limited effect on earnings (Jencks and others, 1972) and the earnings of our samples within occupations did not vary as much as a more heterogeneous sample with many different occupations. Finally, although our findings on the relationship of ego level and earnings were limited, we conclude that there are subtle and important personality differences operating which we simply did not pick up.

But this study clearly adds yet another piece of evidence that the ever-expanding and evolving postsecondary system is not equalizing income. Rather, it seems to support those inequalities. Consider:

--45 percent of our sample clearly expressed the desire to achieve a professional or technical level job by enrolling for training as an accountant, programmer, or electronic technician; but only 16 percent reached that goal.

--Only 19 percent of the sample wanted to become clerical workers but twice that many, 38 percent of the sample, got clerical jobs.

--At the lowest level of the occupational hierarchy, 37 percent wanted employment as service workers and 33 percent found that employment after training.

As we move down in the occupational hierarchy, the fit between training and employment becomes better. A person's background appears to operate indirectly on his career, through the kind of schooling he or she chooses. Those with the most resources choose four-year universities and get higher-status jobs. Those with the least resources choose two-year or less occupational programs in public or proprietary schools and get low status jobs.

Our data indicate yet another dimension of inequality. Two out of ten men who chose to become accountants and went to school for training found accounting jobs. After graduation they earned an average of $131 per week. Men who graduated from four-year colleges in the same year were offered salaries of $204 per week to do the same jobs (accounting, excluding certified public accountants)--a difference of 35 percent (Source: College Placement Survey, January 1973). Comparisons with programmers and electronic technicians were similar.

Jencks and Riesman (1959), Karabel (1972), Newman (1971) and others have written about "educational inflation" which means that a person needs more formal schooling simply to maintain his relative social position. The effects of educational inflation are insidious. Berg (1970) did an extensive study to answer the question "Do people with more years of formal education perform their jobs better than people in comparable jobs with less years of formal education?" Berg concluded that people with more education did not do their jobs better, and suggested that "overeducation" was a root cause of worker dissatisfaction.

Why then should a graduate of a proprietary or two-year public school who is lucky enough to get a professional-level job be paid 35 percent less than a four-year college graduate doing the same work? The skill training in accounting that a four-year college graduate needs to perform the technical aspects of his job can be taught in about two years, according to the dean of a large West Coast university. The skill training in accounting that most two-year public and proprietary graduates need for the jobs they get, which are mostly

clerical, can be taught in weeks. Yet the increasing lengths of time these people are required to stay in school means, in effect, that occupational access is not determined by technical ability but rather by status conferred by years of schooling. Yet high-status educational programs are available only to those who are relatively advantaged already.

The least advantaged person in the postsecondary system most often chooses what is available to him--a local community college, technical school, or a proprietary vocational school. If he chooses to train for a professional level occupation, his chances in our sample are 16 in 100 that he will find a job at that level, even up to four years after school. If he is lucky enough to get one of the prized jobs, he will still earn 36 percent less than a person doing the same job with a four-year degree. On the other hand, if he chooses to enter a lower-status occupation (excluding secretaries), he is likely to get employed in the job of his choice, but, on the average, he will earn less than the federal minimum wage.

We conclude this latest evolution of postsecondary education, public and proprietary training, which supposedly provides new educational services to new students, instead maintains class and income inequalities rather than overcomes them.

CHAPTER 7

RECOMMENDATIONS

These seven recommendations grew out of two central findings: first, that eight out of every ten graduates of professional and technical-level, postsecondary vocational programs did not get the jobs they trained for; and second, eight out of ten graduates from lower-level vocational programs got the jobs they trained for, but with the exception of the secretaries, barely earned the federal minimum wage.

We realize that getting an education, whether occupational or academic, is a risky business. Very few of us end up exactly where we thought we were going when we started out. But we have come to think that consumers of postsecondary vocational training deserve special consideration because they are generally the least-advantaged students in the system.

Many come from general or vocational high school programs, and a good percentage never finished high school. Their avenues to upward mobility in our society are few. To them, education is a serious business. A commitment of time and money (including foregone earnings) usually represents a once-in-a-lifetime effort to break out of their place at the low end of the economic ladder.

History and common sense both tell us we cannot protect all people from making bad choices. We can, however, make sure that people have at least minimal information when they make decisions. We think occupational education consumers need more facts before they can make reasoned decisions on the risks and benefits involved in different kinds of programs.

The following recommendations address the question of how to get important facts to potential consumers of postsecondary occupational education. Over the next few months this report will be read and discussed by educators, legislators, and school administrators who will, we hope, give us their suggestions. With their guidance, we will refine these recommendations until we feel we have an effective and workable format for making these schools more effective institutions for a democratic society.

Recommendation #1: *The federal government should take steps to insure that potential students have access to reliable information on a school's occupational programs. That information should include specific employment objectives of the programs and a detailed description of how well the programs have met those objectives in the past. Regulations should apply to private (nonprofit and proprietary) and public schools.*

Our study shows that public and proprietary schools were not effective in placing graduates in technical or professional-level jobs. The fit between training and placement was better further down in the occupational hierarchy, but the graduates' earnings were so low we wonder if the graduates would have chosen those programs if they had known what lay at the other end.

Schools must provide information that explains exactly what kind of job a program is training for. If most computer programming graduates get computer operating and keypunch jobs, prospective students have a right to know. Potential students also should be able to find out attrition and placement rates and earnings of former students before making a decision.

The Federal Trade Commission has proposed a regulation that would require proprietary schools making claims about employment or earnings resulting from their training to substantiate those claims with placement and salary information from its graduates. The proposed regulation moves in the right direction, but because of the Commission's statutory limitations the regulation covers only profitmaking schools. We feel that forcing only proprietary schools to divulge information about their effectiveness would be unwarranted discrimination against them. All new regulations should apply to any school offering vocational training.

Recommendation #2: *The federal government should consider developing standards for vocational program effectiveness. Certification would be based on the schools' ability to place graduates in jobs for which they trained.*

Product standardization and certification is one of the most common forms of regulation. Although these standards usually apply to safety or quality, we can see no reason why they could not also be used to describe how well schools placed graduates in jobs for which they trained. For example, an 80 percent placement rate might warrant an "A" rating, 65 percent a "C" rating, and so on.

Recommendation #3: [illegible]

If the Federal Trade Commission's proposed trade regulation rule is passed, proprietary schools would have to substantiate their claims about labor market conditions and employment opportunities. To exempt other schools from this same requirement simply because they do not operate for profit addresses only part of the problem. Any school that advertises occupational training, even if only in a catalogue, should be required to abide by the same requirements; and the burden of proof for substantiating claims should rest with the school.

Truth-in-Advertising requirements should pay particular attention to the definition of occupational objectives and explain them to students. A bookkeeper is not an accountant, a telephone repairman is not an electronic technician, and a cosmetologist is not a professional; but many words that inaccurately describe jobs are used almost interchangeably.

Recommendation #4: [illegible]

Currently, limited authority for regulating vocational post-secondary schools lies with voluntary accreditation commissions, the Federal Trade Commission, the U. S. Office of Education, the Veteran's Administration, and a host of offices within state departments of education. Possibly, new legislation could expand the Federal Trade Commission's authority, but actual enforcement should rest within each state where the job is small enough to be done effectively and local citizens can maintain control within broad federal guidelines.

Authority for auditing and enforcement should be placed in state consumer affairs bureaus or other agencies already charged with enforcement. We feel that this authority should not be placed within departments of education, but states might charge "1202" commissions or newly-formed coordinating councils with the auditing and enforcement.

Recommendation #5: [illegible]

We pointed out that in all but one case (dental assisting), ethnic minorities and women earned less than Whites and men in similar jobs. Schools and employers have an ethical and moral obligation to work toward equal pay, but they may also be legally culpable when they actively engage in job placement and referral activities that are discriminatory. Schools should know they may be open for class-action suits for possible violations of Section 6 (D) of the Equal Pay Act of 1963 contained within the Fair Labor Standards Act of 1938, Title VII of the Civil Rights Act of 1972, and the Fourteenth Amendment. We recommend that federal and state governments take steps to see that graduates are protected according to these laws.

We realize if schools are forced to divulge information about placement rates and earnings of graduates, some would seek out only students that have the best chance of finding the better jobs (White males) which would put women and ethnic minorities at a further disadvantage. To help avert this possibility, the federal government should consider incentive plans that would allow cash payments to schools demonstrating they have equalized salaries between men and women, and Whites and ethnic minorities.

Recommendation #6: [illegible]

There is little coordination among the 10,000 proprietary schools, nearly 1000 public community college and technical schools, and many private nonprofit schools that offer occupational training. Private schools operate in a modified market and the public schools in a modified planned system, each with its own constituencies and leadership. Rarely do the two meet except when competing for the same shrinking resources. None of the public schools in our sample regarded local proprietary schools as competitors, although all the proprietary schools considered local public schools their main competition. This indicates a profound lack of information between schools.

We recommend that each level of government try to answer the question: which kind of school does which jobs best? Public schools might be most effective with longer programs (although most could be

shortened) that require a large capital investment. Proprietary schools might do better with low-capital, short-term programs with fast turnovers that yield a quick return on investment.

Some public schools have already explored cooperating with proprietary schools through subcontracting. The public school offers the general education and retains the ultimate right of student certification but subcontracts with local proprietary schools for skill training. This kind of arrangement deserves more study.

Recommendation #7: *Public and proprietary schools should evaluate the objectives of their own programs and determine how well they are meeting them.*

This recommendation, which has no teeth in it, is based on the assumption that schools would like to do a better job of training students for employment than they now do. Employers do need trained employees for jobs, and schools are the logical place for some kinds of training. With better planning and coordination, more people could be satisfied all around.

Each school should clearly define the employment objectives of each of its occupational programs. It should then ask at least the following questions:

- Are the programs' goals realistic?
- Is there a job market for graduates?
- Are graduates qualified for most jobs in their field?
- Are graduates getting a fair return on their investment of time and money?

Only after thorough self-analysis should authorities in public and private schools say with conviction that there is a value added by the training offered. If graduates could get the same jobs without the training, schools should revamp their offerings.

During the next few months we plan to rewrite these preliminary recommendations in more complete form for publication. We invite your comments and suggestions. The last page of this report can be torn off and mailed to us with your responses.

APPENDIX 1

REPORT ON LOCATING PROCEDURES by Doris Newman, NORC, April 15, 1974.

Reaching the 85 percent net completion rate on this study required many different procedures, some conventional and some possibly somewhat unorthodox.

Obviously the beginning was easy--Respondents had listed telephone numbers which actually belonged to them or, where no telephone number was on the school list, we could get the number from Information according to address. In many cases Respondents lived with their families, so the surname was listed at that address with a different first name. This was no problem if the name was not too common and the list not too long for the Information operator to search for the corresponding address. Fortunately Grand Central Terminal in New York has directories for most large cities, our local supervisors had their own directories, and some information operators are very obliging.

In certain cases we found that Respondents had telephones with unpublished numbers. Here we sent a telephone letter requesting the number. We used the same letter in cases where repeated calls at all hours elicited no response. Our percentage response on this letter was not high but it helped. The local supervisors as well as New York mailed these letters, so it is hard to estimate the number sent--probably several hundred. All told, about 45 letters were returned with information on when and how to contact the respondents. We were most successful with respondents who had moved some distance --our farthest was a young lady from Boston, trained as a dental assistant, and now working hard at Mormonism in Utah.

Occasionally we found the reverse city directories of limited use, but more as a source of verifying addresses than of obtaining phone numbers.

The telephone company's listings are remarkably complete and current and, if properly approached, the Information operators are invaluable assistants. For example, the San Francisco area has ten different

telephone directories, and a Respondent not locatable at the listed address could often be found in an adjoining area. In any study of this kind a complete set of all current directories as well as a good map and a good knowledge of the local geography, both physical and socioeconomic, are of primary importance. We were fortunate in having very knowledgeable supervisors in all areas.

Contacting respondents through their place of employment was useful to a very limited degree. It seemed as if the 1970-71 graduates had gone on to new jobs other than those listed with the schools in many cases, and the 1972-73 class had no jobs yet listed. Moreover, some firms were reluctant to give us information, although in cases where they could be persuaded it was usually very good.

We also had a sizeable problem with suspicious and uncooperative families who refused to tell us where Respondents were or, if they were still living at home, to let us talk to them. In the case of the women, they were also loath to reveal their married names, after telling us that the Respondents were now married. In such cases occasionally the telephone-letter would get past mother who might answer the phone for her child but hadn't yet reached the point of opening her son's or daughter's mail. The mail, incidentally, was often sent in a plain envelope and hand-addressed so as not to be identifiable from the outside. The contents, of course, were always our regular letters.

Another method of reaching these Respondents was through other members of the family. In one case where father was vague and mother was adamant we found the same unusual surname listed in one of the suburbs. It turned out to be the young lady's brother and sister-in-law who had no phone number for the Respondent but said they'd give her mail if we sent it there. The Respondent, contrary to her family's assurances that she was not interested, went to the trouble of calling our New York office to be interviewed once we had penetrated the Iron Curtain and finally reached her.

One of our last interviews was done with an accountant with a long unpronounceable Peruvian name. We located his ex-wife who gave us the name of a friend who might know his whereabouts. We reached the friend who had no address or telephone number for the Respondent, but he said he spoke to him about once a week and would have the Respondent contact us. And (like the Little Red Hen) he did!

Then there was the Respondent who moved to Michigan, for whom we had a new address but no telephone number. Since we had no reply on the telephone-letter we called the local Post Office. They knew he had no phone listed because he lived with his in-laws. And how did they know it? He worked for the Post Office.

In addition to the name, address, and phone number for each Respondent, each original sample sheet had a space for the name of a reference person which our listers inserted in cases where the school had such information on file. In one case, for example, the reference person in Chicago had moved to Los Angeles. We found the Los Angeles address from a Chicago neighbor on whom we called when, unable to locate the Respondent, we went looking for the reference person. When we reached the Los Angeles contact she, in turn, gave us a partial address for the Respondent back in Chicago and from that we found him and got our interview.

Another reference person for a Miami case lived in Cambridge, Massachusetts, but had no phone. A personal call there elicited the name of the Respondent's mother (the reference person's wife) in Florida, and the daughter lived right up the street from her mother.

But our most useful source of information after the telephone company was the Post Office. Out of a total of approximately 2900 cases to which letters were mailed, we had some 187 forwarding addresses supplied by the Post Office, and in addition about 350 letters came back with varying notations. The breakdown in the New York office by areas was as follows:

	Boston	Chicago	Miami	San Francisco
Letters returned	50	99	92	107
Letters forwarded by PO	41	42	52	52
New addresses & $1	3	16	20	10
Successful telephone-letters	13	3	4	13

These figures are not strictly accurate for several reasons. Some letters were forwarded without our being notified while other undelivered letters were not all returned. And there were some, although not many, duplications of information. As for the figures on the telephone-letters, Chicago had some of theirs returned directly to them rather than coming into the New York office, since they had their own printed return envelopes from NORC to use.

Fortunately, returned mail comes back with the reason for return indicated. Letters marked "no such address" are pretty much of a total loss. One marked "addressee unknown at this address" or "moved, left no address" are not much better although here occasionally a personal call may be successful. But those marked "moved, not forwardable" or "forwarding address expired" can be a goldmine.

This code usually means that the Post Office has or had an address. If the Respondent has moved within a year the letter will be forwarded automatically and a card sent us with the forwarding address. But

the Post Office keeps addresses on file for two years, so for $1, if they still have the address on file, you may obtain it. Like all rules, each Post Office interprets this one its own way--small towns keep their records longer and will give you addresses more than two years old, often accompanied by nice personal notes. San Francisco Main Post Office apparently keeps nothing longer than ten minutes, and Miami is somewhat better but not much. All told, we sent for 131 addresses and received about 50 to work from, most of them very good, a response rate of almost 40 percent.

We also got new addresses from the Boards of Cosmetology in both Sacramento and Tallahassee (which were the only two areas where we had cosmetologists in the sample). Here, too, our results were just fair, with about 28 addresses from California out of 87 requested and 11 of about 50 from Florida, but many of them long outdated and of no use. Our results with the California Motor Vehicle Department checking names against registered drivers' licenses were somewhat better but not spectacular, and they cost us $3 for each name for a prompt response. A $1 inquiry takes about six weeks and we didn't have that much time available. Incidentally, the Boards of Cosmetology made no charge at all, which was fortunate in view of our results.

We also went back to the schools, hopefully for improved addresses, possibly in a different file or office. Here the results varied according to the schools and how they kept their records. The most useful part of this investigation was corroborating the visa entries of Respondents who were here on student visas and therefore could be assumed to have left the country and thus dropped out of our sample. A student visa is only good for about a month after graduation, after which time the student becomes an illegal alien and even more difficult to trace since he doesn't want to be found by anybody. Incidentally, the Immigration Department was of no help in locating since they require submission of forms showing place and date of birth, date and port of entry, and other detailed information we did not have.

One method of location which we found least useful was the practice of leaving our number for a hard-to-reach respondent and asking to have him call us tack collect. This method leaves the interviewer hanging--she doesn't want to call again and risk an out-and-out refusal because the Respondent feels he is being bangered or the contact person gets annoyed, and yet she can't wait forever. On the whole, it is a good method not to use.

In summarizing our methods of contacting and interviewing, it is extremely difficult to compare rates of effectiveness on each one as so many cases involved combinations of several. Only a detailed analysis of the Face Sheets on all the completed cases could give accurate figures. The costs on personal interviewing--meaning interviews done face-to-face with the Respondent--do not begin to

indicate the number completed by getting out into the field, locating some single piece of information about the Respondent and then following it up and interviewing by telephone. Perhaps an illustration will show this fact better than an explanation:

A persistent field interviewer tracked down a neighbor of one Respondent and the neighbor mentioned that the respondent had moved to Colorado "a couple of years ago." Sparsely populated states such as Colorado, Idaho, or Utah are always hopeful. In this case, since the Respondent was not listed in Denver, the obvious first choice, and since as a cosmetologist a populous tourist area seemed likely, the next choice was Colorado Springs. And there she was, the only listing under that surname, presumably just waiting for us to call her.

In conclusion, we felt that the response to our mail questionnaires was a bonus of sorts since all we could do there was mail them out and wait. Mailing was relatively cheap (65¢ for domestic airmail to send the questionnaire, return envelope, original letter and special "mail-letter"), particularly where we had already invested quite a sum in contacting and locating. We sent our 67 domestic mail questionnaires. These went to people without telephones in areas where we had no interviewers near enough to make a personal call. (Domestic mail-letters attached.) They went to servicemen overseas whom we had found through the Worldwide Locator in Washington. In these cases families or neighbors had indicated that the Respondents were in the Service, and with the Respondent's name and social security number and an explanation of what we wanted the Army and Air Force Locators would supply the information. The Navy would not oblige, but with sufficient effort on our part they might have--we only had one case. In addition, mail questionnaires were sometimes forwarded by families reluctant to give us new names or addresses but willing to forward mail. Some Respondents requested mail questionnaires in reply to our original letter or to the telephone-letter. And a few we just sent to people who had refused to be interviewed by telephone. And a few we just sent to people who had refused to be interviewed by telephone. So far, we have received 17 completed questionnaires from domestic sources (those that are returned to us under our postal permit), a rate of just 25 percent.

In addition, we sent out 42 questionnaires to foreign addresses all over the world at a total mailing cost of $65. These addresses were obtained either from the schools, where the only listing was a foreign one, or where the records showed family at a foreign address who might forward mail to a respondent whom we had been unable to find in the United States, or where we had obtained a foreign address from a contact person or employer here for a Respondent who had left the United States. Since we were unable to prepay the postage in these cases, we offered the respondent $5 upon receipt of the completed questionnaire to reimburse him, with a bit to spare, for

the return postage he was forced to pay. To date we have received eight questionnaires, one each from the Bahamas, Mexico, Costa Rica, Vnezuela, Ecuador, and Columbia, and two from New Guinea, but since the offer still holds for several weeks perhaps we will get more.

The key factors in all cases seem to be persistence and time. People don't just vanish into thin air, they are somewhere and the frustration of the Can't Locates was undeniably the most difficult part of this whole study.

APPENDIX 2

SOCIOECONOMIC STATUS

As of 1967, according to Hodgkinson (1967), about 1000 articles and books had been published that dealt with social class in America. Yet it remains an elusive and controversial subject. If we define socioeconomic status as a relative ranking that is derived from a combination of social and economic factors, the major components of this concept are: one's occupation, one's level of education, one's income, and social ranking by others. The last of these was termed Evaluative Participation (EP) by Warner (1957) in his classic work, Social Class in America, but later, as urban societies becamer larger, more complex, and anonymous, this variable was found to be unreliable,

The results of the Coleman (1966) study suggest that student responses are reliable. In this study of some 640,000 students, Coleman found that self-report on SES items resulted in "reasonable" accuracy on items about themselves, their schooling, and their homes and families.

In a limited pilot test, we included three other items in our initial SES measure--books in the home, rooms per person, and personal possessions.

The items dealing with roors per person, books in the home, and personal possessions were dropped from the SES Index because of low intercorrelations. The resulting measure for socioeconomic status is an equally weighted (Green, 1968) combination of father's and mother's level of education, occupation of father, and family income, which the literature shows to be the primary measure for SES.

A large number of students failed to complete all four of the items that comprised the SES measure and we were unable to construct the index as originally planned. Instead, we identified the 810 cases that contained complete data, on all four variables, and constructed the correlation matrix below.

TABLE A1

CORRELATION MATRIX OF FOUR VARIABLES COMPRISING THE SES INDEX FOR GRADUATING STUDENTS
(n = 810)

	VAR323	VAR324	VAR332	VAR335
Mother's Education VAR323	1.0000	.5203	.2718	.3931
Father's Education VAR324	.5203	1.0000	.3775	.3715
Father's Occupation VAR332	.2718	.3775	1.000	.3031
Family Income	.3931	.3715	.3031	1.0000

This procedure developed the relationship between each of the four variables that make up the SES Index. Using regression techniques, the value of missing data on one variable was predicted from the data on the other three variables. The missing data was filled accordingly. Scores were standardized and a new correlation matrix was derived for the 810 cases plus the completed 521 cases.

TABLE A2

CORRELATION MATRIX OF FOUR VARIABLES COMPRISING
SES INDEX AFTER FILLING MISSING
DATA FOR GRADUATING STUDENTS
(n = 1331)

	VAR323	VAR324	VAR332	VAR335
VAR323	1.0000	.5415	.2428	.4037
VAR324	.5415	1.0000	.3682	.3796
VAR332	.2428	.3682	1.0000	.3184
VAR335	.4037	.3796	.3184	1.0000

Thirty-nine cases were found to be missing data on all four variables. The decision was made to inspect each schedule to determine if the respondents had failed to answer an abnormal number of other questions, and if, in our judgement, the other responses in the 39 schedules appeared to be flippant or otherwise unreliable. The questionnaires were inspected, were judged to be reliable and were returned to the data file. In the analyses that treat SES as a dependent variable, those cases were not used.

APPENDIX 3

ACHIEVEMENT MOTIVATION

We reviewed existing instruments for measuring achievement motivation and selected Loevinger's ego development (1970). Originally conceived by Adler (1956), it was operationalized recently by Loevinger and is measured from the results of sentence completion tests. The development of one's ego (or self) is seen as moving through various stages (Loevinger defines seven), each of which has its own characteristics, as indicated in the table on the following page. Low ego development is characterized partly by impulsiveness, opportunistic behavior, and dependence on extrinsic standards. Higher levels of ego development are characterized by tolerance for ambiguity, conceptual complexity, and inner-directednes.

Fred L. Strodtbeck, Director of the University of Chicago's Social Psychology Laboratory, developed the connection between Loevinger's concept of ego development and its relationship to the achievement motive through a modified sentence-completion test. The achievement motive at the lower ego levels can be characterized by a striving for material things, through narrowly goal-oriented behavior. At the mid-levels, achievement motivation takes on a new dimension of needs for social approval and objective accomplishment. At the upper ranges, inner standards come into play and self-realization in part supplants the externally-oriented achievement motive.

Strodtbeck has established positive correlations between ego development and Potter's Internal-External Scale (r=.16), and Coopersmith's Self Esteem Scale (r=.21) that measure elements of the achievement motive. Positive relationships between ego development and McClelland's nAch have also been demonstrated, although they have not been published yet.

Each of the beginning and graduating students and the 1970-71 graduates completed a sentence completion test, which was scored by trained scorers under the supervision of Stephen Hansell of Chicago's Social Psychology Laboratory. The total protocol rating between each of the four scorers and Hansell ranged from .76 to .88.

In order to provide a better understanding of the concept, we have provided some examples taken from student responses to sentence completions at different ego levels.

We chose the sentence stub: Education.....

A subject at the Δ level would be likely to respond:

Education....."is a good thing to have."

A subject at the 3/4 level would be likely to respond:

Education....."is a very important step in life."

A subject at the 3 level would be likely to respond:

Education....."is very important to get a job."

A subject at the 5 level would be likely to respond:

Education....."seems valuable in itself."

The first response at the delta level represents a relatively low level of ego development because the Δ person perceives education as something to possess, but with no clear objective or reasons. The level 3 response represents a higher degree of responsibility in terms of job orientation, and the utilization of education as a means to another end--the end in this sense (a job) is external to the subject, and conforming in nature. The 3/4 person no longer sees education as a concrete entity that one can possess, or strictly as a means to an end, but rather as a part of the process of life and the future. In the level 5 score, education is viewed as having intrinsic value, and its use is self-determined, rather than conforming.

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TABLE 13

SOME MILESTONES OF EGO DEVELOPMENT

Stage	Code	Impulse Control, Character Development	Interpersonal Style	Conscious Preoccupations	Cognitive Style
Presocial Symbiotic	I-1		Autistic Symbiotic	Self vs. non-self	
Impulsive	I-2	Impulsive, fear of retaliation	Receiving, dependent, exploitive	Bodily feelings, especially sexual and aggressive	Stereotypy, conceptual confusion
Self-protective	Δ	Fear of being caught, externalizing blame, opportunistic	Wary, manipulative, exploitive	Self-protection, wishes, things, advantage, control	
Conformist	I-3	Conformity to external rules, shame, guilt for breaking rules	Belonging, helping, superficial niceness	Appearance, social acceptability, banal feelings, behavior	Conceptual simplicity, stereotypes, cliches
Conscientious	I-4	Self-evaluated standards, self-criticism, guilt for consequences, long term goals and ideals	Intensive, responsible, mutual, concern for communication	Differentiated feelings, motives for behavior, self-respect, achievements, traits, expression	Conceptual complexity, idea of patterning
Autonomous	I-5	Add: Coping with conflicting inner needs, toleration	Add: Respect for autonomy	Vividly conveyed feelings, integration of physiological and psychological, psychological causation of behavior, development, role conception, self-fulfillment, self in social context	Increased conceptual complexity, complex patterns, toleration for ambiguity, broad scope, objectivity
Integrated	I-6	Add: Reconciling inner conflicts, renunciation of unattainable	Add: Cherishing of individuality	Add: Identity	

Note.—"Add" means in addition to the description applying to the previous level.

Source: Loevinger, Wessler, and Redmore, Measuring Ego Development, San Francisco: Jossey-Bass, 1970.

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To the reader:

We are interested in receiving comments on this research report, and particularly on the preliminary recommendations contained in Chapter 7. For example, are the recommendations feasible? If not, what are some alternatives? Which state agencies might best handle enforcement and consumer protection? How should the final recommendations be presented in order to have an impact on federal and state legislation?

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